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Geodynamics Service of Canada

Service de la géodynamique du Canada

PZT OBSERVATIONS OF TIME AND LATITUDE OTTAWA AND CALGARY, 1982-83

OBSERVATIONS PZT DE TEMPS ET DE LATITUDE OTTAWA ET CALGARY, 1982-83

J. Popelar, M.O. Wheeler, M. Daniels

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FOREWORD

This bulletin presents in summary form the results of time and latitude observations made with two Photographic Zenith Tubes (PZT) located near Ottawa, Ontario and Calgary, Alberta. As such, it is a continuation of previous Time and Latitude Bulletins issued by the Positional Astronomy Group of the now defunct Dominion Observatory. On April 1, 1970, the PZT observatories became part of the Earth Physics Branch of the Department of Energy, Mines and Resources. Since July 1, 1973, the Geodynamics Section of the Gravity and Geodynamics Division has had the responsibility for the PZT program. On April 1, 1982, the Section became the Global Dynamics Section of the Gravity, Geothermics and Geodynamics Division.

Director
Gravity, Geothermics and
Geodynamics Division

AVANT-PROPOS

Le présent bulletin présente de façon résumée les résultats des observations de temps et de latitude faites à l'aide de deux lunettes photographiques zénithales (PZT) situées près d'Ottawa, en Ontario et de Calgary, en Alberta. Ainsi, il s'agit de la suite des précédents bulletins de temps et de latitude publiés par le Groupe de l'astronomie de position de l'ancien Observatoire fédéral. Le 1er avril 1970, les observatoires PZT ont été rattachés à la Direction de la physique du globe, du ministère de l'Énergie, des Mines et des Ressources. Depuis le 1er juillet 1973, la Section de la géodynamique, de la Division de la gravité et de la géodynamique a reçu la responsabilité d'administrer le programme PZT. Le 1er avril 1982, la Section devenait la Section de la dynamique globale de la Division de la gravité, de la géothermie et de la géodynamique.

Directeur
Division de la gravité, de la géothermie
et de la géodynamique

PZT OBSERVATIONS OF TIME AND LATITUDE OTTAWA AND CALGARY, 1982-83

OBSERVATIONS PZT DE TEMPS ET DE LATITUDE OTTAWA ET CALGARY, 1982-83

J. Popelar, M.O. Wheeler, M. Daniels

This bulletin presents the results of time and latitude observations made with the Ottawa and Calgary photographic zenith tubes (PZT) during 1982-83, in continuation of Bulletin No. 73. The data from both PZT instruments have been contributed regularly to the international programs of the BIH and IPMS.

OTTAWA PZT has been located at Shirleys Bay near Ottawa since December 30, 1970. The adopted BIH co-ordinates for the instrument are:

$5^h\ 03^m\ 40.8500^s$ W $45^o\ 24'\ 0.800''$ N

The observational program, which is based on the 1972 star catalogue which was published in Bulletin No. 63. Nightly operations of the PZT are pre-programmed and fully automated. The instrument provided consistent data of high quality throughout the period. Altogether 400 photographic plates were obtained from which 8180 transits of program stars were processed. For time comparisons the CHU time signals were used regularly.

CALGARY PZT at Priddis near Calgary is located approximately on the same parallel as the Herstmonceux PZT of the Royal Greenwich Observatory. The adopted BIH co-ordinates for the instrument are:

$7^h\ 37^m\ 9.5000^s$ W $50^o\ 52'\ 22.500''$ N

Since 1975.0 the observational program has been based on the revised Herstmonceux PZT star catalogue (Greenwich Time Report, 1976 January-March). Nightly operation of the PZT is also pre-programmed and fully automated. During 1982-83, 405 photographic plates were obtained from which 9880 transits of program stars were evaluated. For time comparisons the WWV time signals were used regularly.

Le présent bulletin donne les résultats des observations de temps et de latitude effectuées à l'aide des deux lunettes photographiques zénithales (PZT) d'Ottawa et de Calgary, au cours de 1982-83, comme suite au bulletin n^o 73. Les données provenant des deux instruments PZT ont contribué de façon régulière aux programmes internationaux du BIH et du IPMS.

LE PZT D'OTTAWA est situé à la baie Shirleys, près d'Ottawa, depuis le 30 décembre 1970. Les coordonnées du BIH adoptées pour l'instrument sont:

$5^h\ 03^m\ 40.8500^s$ W $45^o\ 24'\ 0.800''$ N

Le programme d'observation est basé sur le catalogue 1972 des étoiles qui a été publié dans le bulletin n^o 63. Les travaux nocturnes du PZT sont programmés à l'avance et entièrement automatisés. L'instrument a fourni des données consistantes de haute qualité, tout au cours de la période. En tout, 400 plaques photographiques ont été obtenues, à partir desquelles 8180 passages des étoiles au programme ont été évalués. Aux fins de comparaison de temps, les signaux horaire de CHU ont été utilisés de façon régulière.

LE PZT DE CALGARY situé à Priddis, près de Calgary, se trouve approximativement sur le même parallèle que celui du PZT de Herstmonceux, de l'Observatoire royal de Greenwich. Les coordonnées du BIH adoptées pour l'instrument sont les suivantes:

$7^h\ 37^m\ 9.5000^s$ W $50^o\ 52'\ 22.500''$ N

Depuis 1975.0, le programme d'observation est basé sur le catalogue révisé des étoiles du PZT d'Herstmonceux (Rapport du temps de Greenwich, janvier-mars 1976). Les travaux nocturnes du PZT sont également programmés à l'avance et entièrement automatisés. Au cours de 1982-83, 405 plaques photographiques ont été obtenues, à partir desquelles 9880 passages des étoiles au programme ont été évalués. Aux fins de comparaison de temps, les signaux horaires de WWV ont été utilisés de façon régulière.

Mean plate time and latitude observations have been smoothed using the technique suggested by Vondrak (Bull. Astr. Inst. of Czechoslovakia, Vol. 20, No. 6, 1969) with weights proportional to the number of observed stars for each plate. UTC step adjustments were removed before smoothing and the value of 10^{-7} was used as the coefficient of roughness. The smoothed time and latitude curves, with individual plate means for the Ottawa PZT and the Calgary PZT, are shown in Fig. 1 and 2 respectively.

Operational notes:

1. Both PZT observatories have been equipped with satellite Doppler tracking stations and contributed observations of TRANSIT satellites on a daily basis to the Satellite Polar Monitoring Service of the U.S. Defense Mapping Agency since 1975. On 11 August 1983 new CHU antennae systems were put into service; new station identification numbers and NAD1927 antennae locations are as follows:

Station No.	Ottawa 564	Calgary 563
Lat.(N)	45 23' 59.413"	50 52' 16.647"
Long.(W)	75 55' 08.451"	114 17' 32.923"
H(m.s.l)/(n.m.m)	82.10 m	1264.28 m

2. HP5061A Cesium Beam Frequency Standard Ser. No. 2002A10824 was installed at the Shirleys Bay observatory in September 1981 as the primary time and frequency reference for both the PZT and the TRANET satellite Doppler tracking station.

3. Kodak spectroscopic plates Type IIa-0 have been used for both the Ottawa and Calgary PZT during 1982-83 reporting period.

4. PZT data reduction software has been modified to comply with IAU/IUGG resolutions and MERIT standards by introducing the 1976 IAU System of astronomical constants and the 1980 IAU Theory of Nutation. Although observational results in this publication refer to the 1968 System all data for 1983 have been reprocessed using MERIT standards and can be made available upon request.

Les moyennes tirées de plaques des observations de temps et de latitude ont été lissées en utilisant la technique proposée par Vondrak (Bull. Inst. Astr. de Tchécoslovaquie, vol. 20, n° 6, 1969) avec pondérations proportionnelles au nombre des étoiles observées pour chaque plaque. Les réglages d'échelon du UTC ont été enlevés avant le lissage et la valeur de 10^{-7} a été utilisée comme coefficient de rugosité. Les courbes de temps et de latitude lissées, avec les moyennes de chaque plaque pour le PZT d'Ottawa et celui de Calgary, sont respectivement montrées aux figures 1 et 2.

Remarques sur les activités:

1. Depuis 1975, les observatoires PZT sont équipés de stations de repérage de satellites par effet Doppler et transmettent quotidiennement les données des satellites TRANSIT au Satellite Polar Monitoring Service de la U.S. Defence Mapping Agency. Le 11 août 1983 de nouveaux systèmes d'antennes CHU ont été mis en service. Les nouveaux numéros d'identification des stations ainsi que les coordonnées NAD1927 des antennes sont les suivantes:

2. Une horloge à césium Hewlett-Packard modèle HP5061A, No. de série 2002A10824 a été installée à l'observatoire de Shirleys Bay en septembre 1981. L'horloge sert d'étalon de fréquence pour les deux PZT et la station TRANET.

3. Des plaques spectroscopiques du type IIa-0 de Kodak furent utilisées pour les PZT d'Ottawa et de Calgary pour la période 1982-1983.

4. Le logiciel servant à traiter les données PZT a été doté des constantes astronomiques du système UAI de 1976 et de la théorie de la nutation UAI de 1980 pour se conformer à la résolution IAU/IUGG et aux normes MERIT. Bien que les résultats de la présente publication ne correspondent qu'au système de 1968, toutes les données pour 1983 ont été traitées selon les normes MERIT et sont disponibles sur demande.

TABLE 1 presents the results of time and latitude observations arranged by nights (plates) separately for the Ottawa and Calgary stations.

Column	Description
1	Date(UT) of mid-observation
2	Julian Date of mid-observation
3	N - number of observed stars
4	UTO - UTC observed - raw time observations
5	UTO - UTC smoothed - smoothed values of time observations
6	UT Res. - differences between the smoothed and raw values of UTO-UTC
7	PHI O observed - raw latitude observations
8	PHI O smoothed - smoothed values of latitude observations
9	PHI Res. - difference between the smoothed and raw values of PHI O

TABLE 2 gives the smoothed values of UTO-UTC and PHI O at standard five (5) day intervals for the Ottawa and Calgary stations.

LE TABLEAU 1 contient les résultats des observations de temps et de latitude répartis par nuits (plaques) et séparés pour la station d'Ottawa et celle de Calgary.

Colonne	Description
1	Date (UT) du milieu de l'observation
2	Jour julien du milieu de l'observation
3	N - nombre d'étoiles observées
4	UTO - UTC observé - observations brutes de temps
5	UTO - UTC lissé - valeurs lissées de temps
6	UT Res. - différence entre la valeur brute et la valeur lissée du UTO-UTC
7	PHI O observé - observations brutes de latitude
8	PHI O lissé - valeurs lissées de latitude
9	PHI Res. - différence entre la valeur brute et la valeur lissée de PHI O

LE TABLEAU 2 donne les valeurs lissées du UTO-UTC et le PHI O à un intervalle normal de cinq (5) jours pour les stations d'Ottawa et de Calgary.

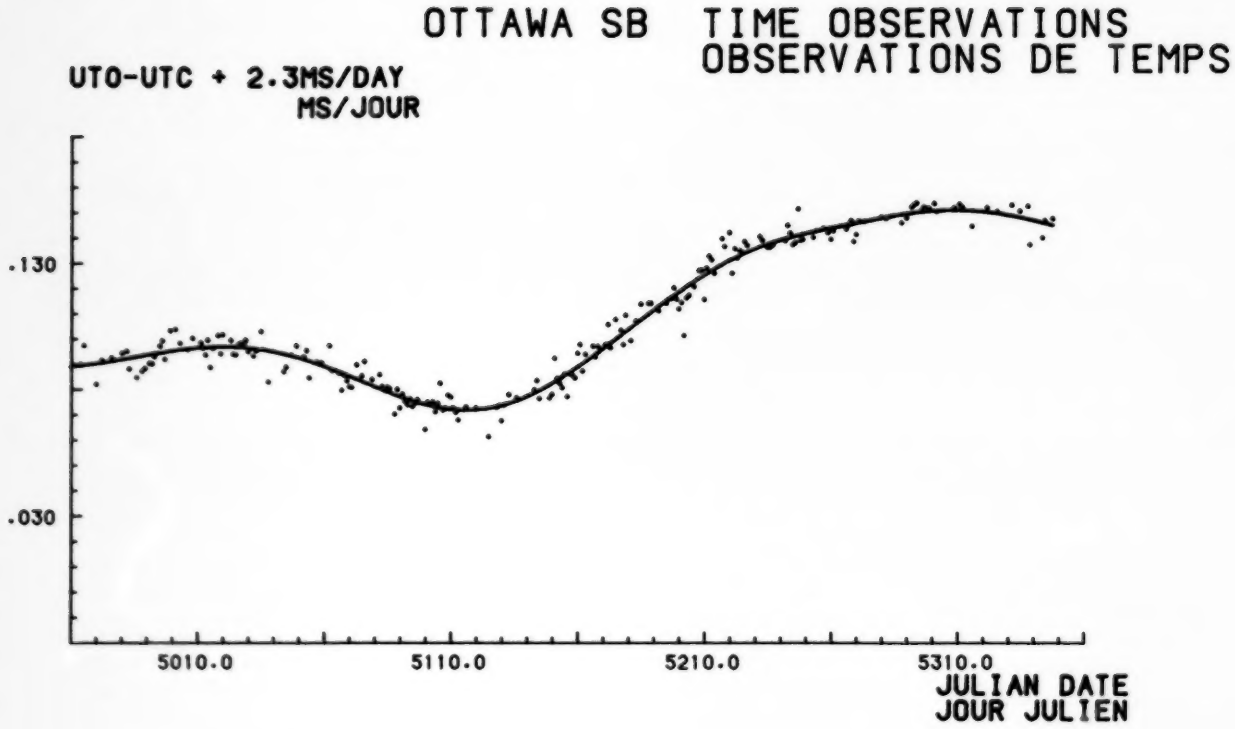

Figure 1a. Individual night observations of time with the Ottawa PZT in 1982 and the smoothed curve for UTO - UTC + 2.3 ms/day* (STD 4.2 ms).
* The UTC step adjustments have been removed.

Observations individuelles nocturnes de temps par le PZT d'Ottawa en 1982 et la courbe lissée pour le UTO-UTC + 2.3 ms par jour* (MQ 4.2 ms).
* Les réglages d'échelon du UTC ont été enlevés.

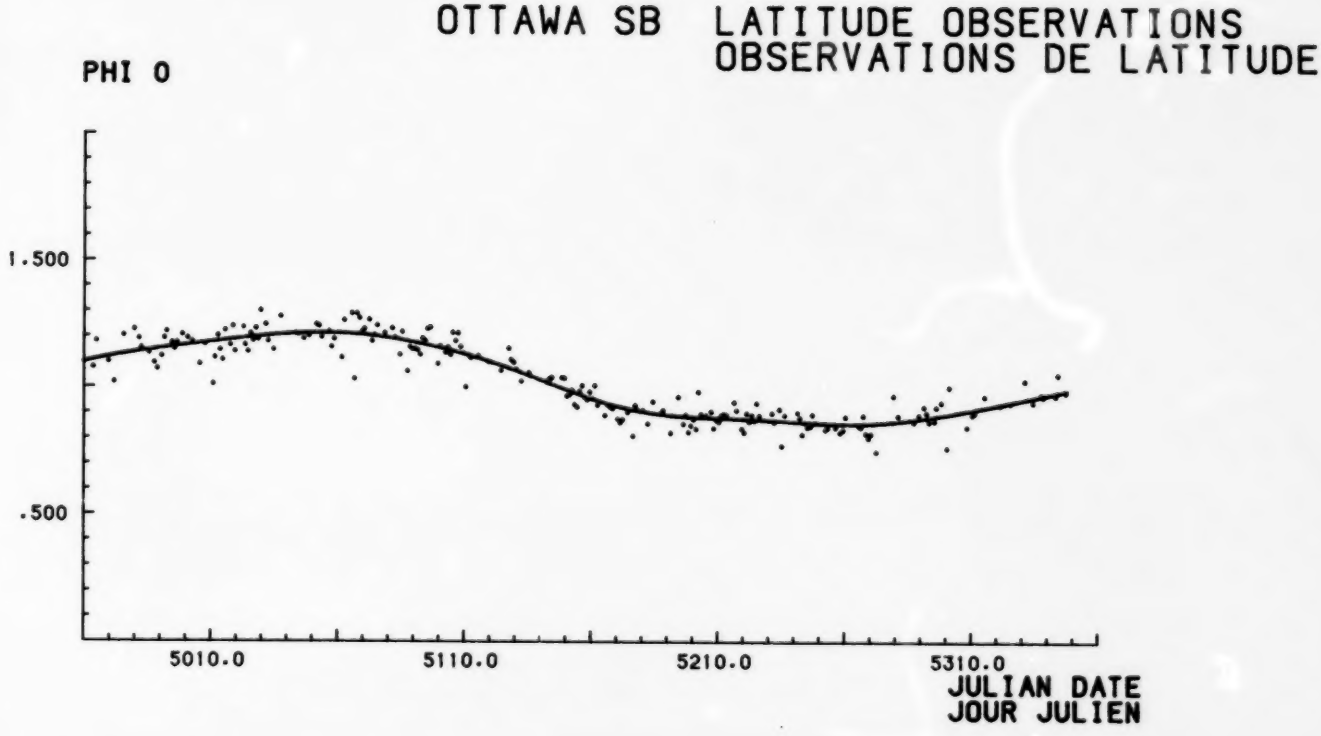

Figure 1b. Individual night observations of latitude with the Ottawa PZT in 1982 and the smoothed curve for PHI 0 (STD 0.044").

Observations individuelles nocturnes de latitude par le PZT d'Ottawa en 1982 et la courbe lissée pour PHI 0 (MQ 0.044").

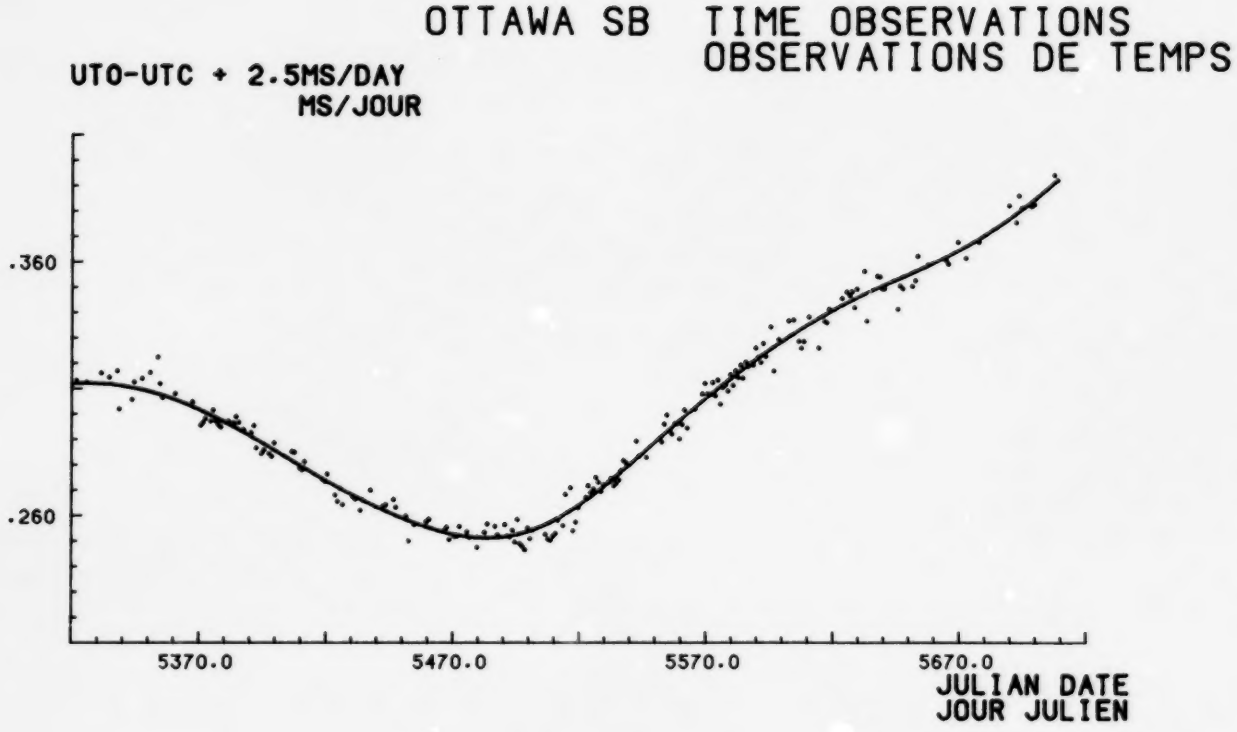

Figure 1c. Individual night observations of time with the Ottawa PZT in 1983 and the smoothed curve for UTO - UTC + 2.5 ms/day* (STD 3.8 ms).
* The UTC step adjustments have been removed.

Observations individuelles nocturnes de temps par le PZT d'Ottawa en 1983 et la courbe lissée pour le UTO - UTC + 2.5 ms par jour* (MQ 3.8 ms).
* Les réglages d'échelon du UTC ont été enlevés.

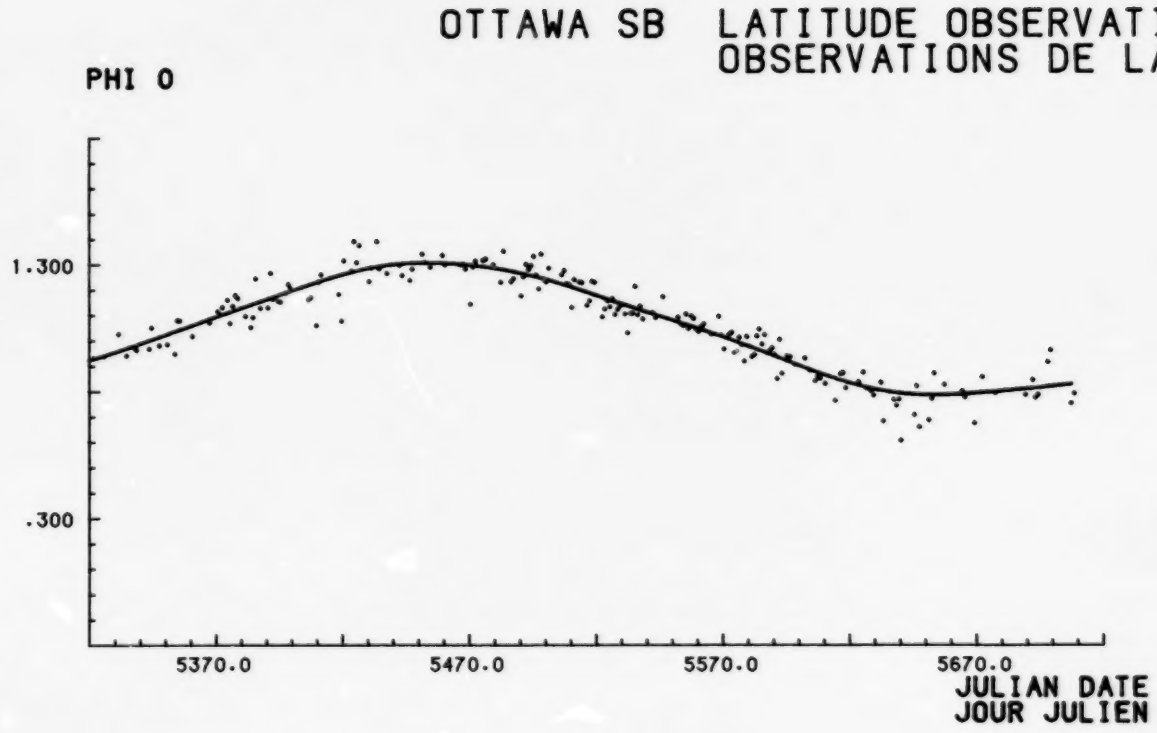

Figure 1d. Individual night observations of latitude with the Ottawa PZT in 1983 and the smoothed curve for PHI 0 (STD 0.047").

Observations individualles nocturnes de latitude par le PZT d'Ottawa en 1983 et la courbe lissée pour PHI 0 (MQ 0.047").

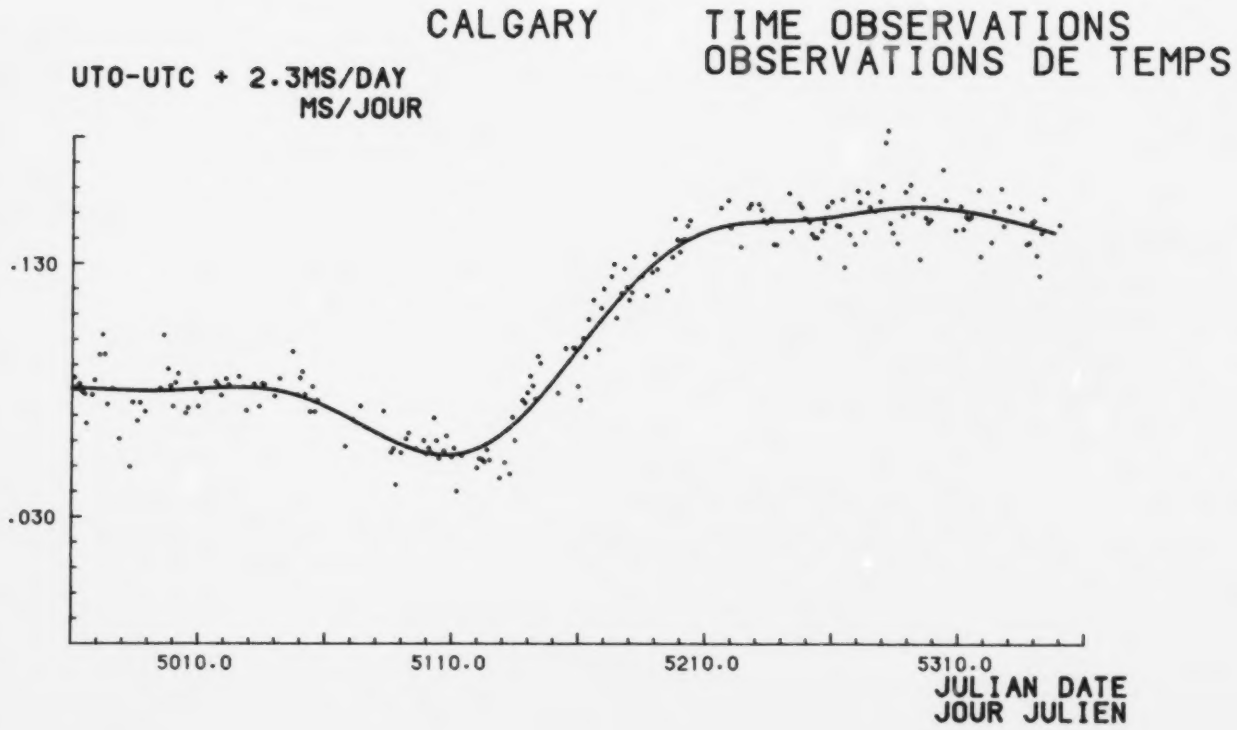

Figure 2a. Individual night observations of time with the Calgary PZT in 1982 and the smoothed curve for UTO - UTC + 2.3 ms/day* (STD 8.0 ms).
*The UTC step adjustments have been removed.

Observations individuelles nocturnes de temps par le PZT de Calgary en 1982 et la courbe lissée pour le UTO-UTC + 2.3 ms par jour* (MQ 8.0 ms).
* Les réglages d'échelon du UTC ont été enlevés.

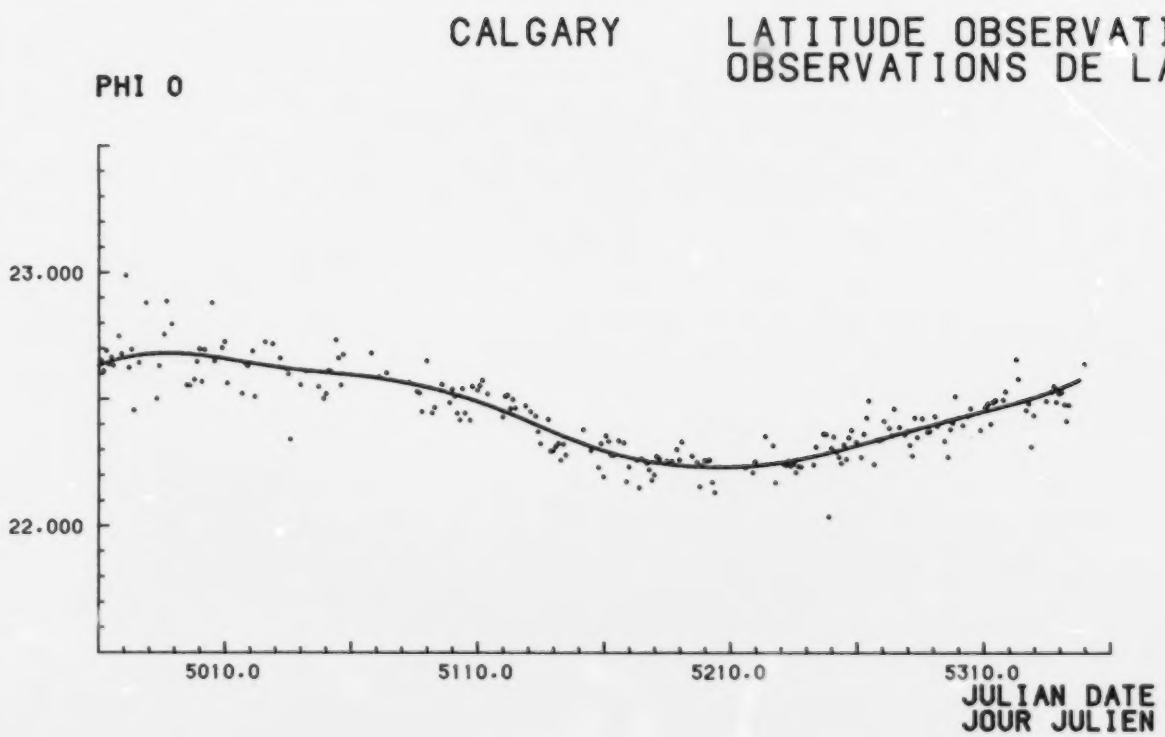

Figure 2b. Individual night observations of latitude with the Calgary PZT in 1982 and the smoothed curve for PHI 0 (STD 0.067").

Observations individuelles nocturnes de latitude par le PZT de Calgary en 1982 et la courbe lissée pour PHI 0 (MQ 0.067").

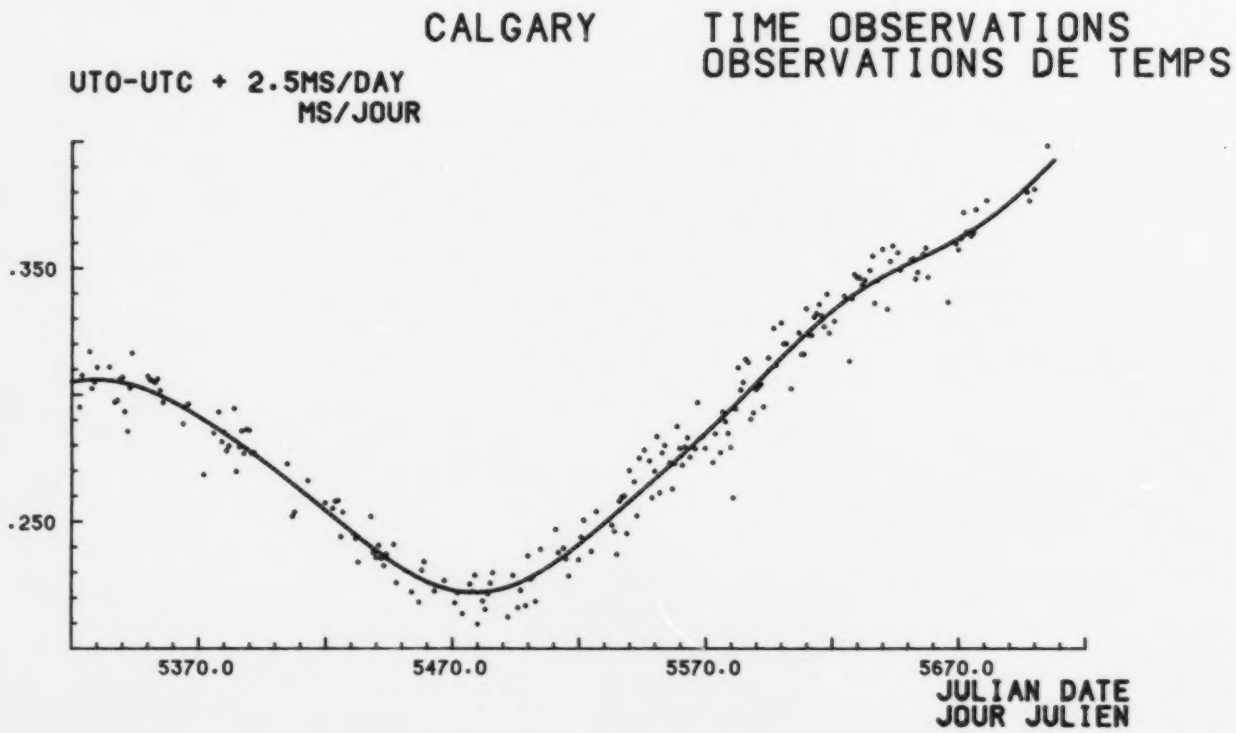

Figure 2c. Individual night observations of time with the Calgary PZT in 1983 and the smoothed curve for UTO - UTC + 2.5 ms/day* (STD 6.7 ms).
*The UTC step adjustments have been removed.

Observations individuelles nocturnes de temps par le PZT de Calgary en 1983 et la courbe lissée pour le UTO - UTC + 2.5 ms par jour* (MQ 6.7 ms).
* Les réglages d'échelon du UTC ont été enlevés.

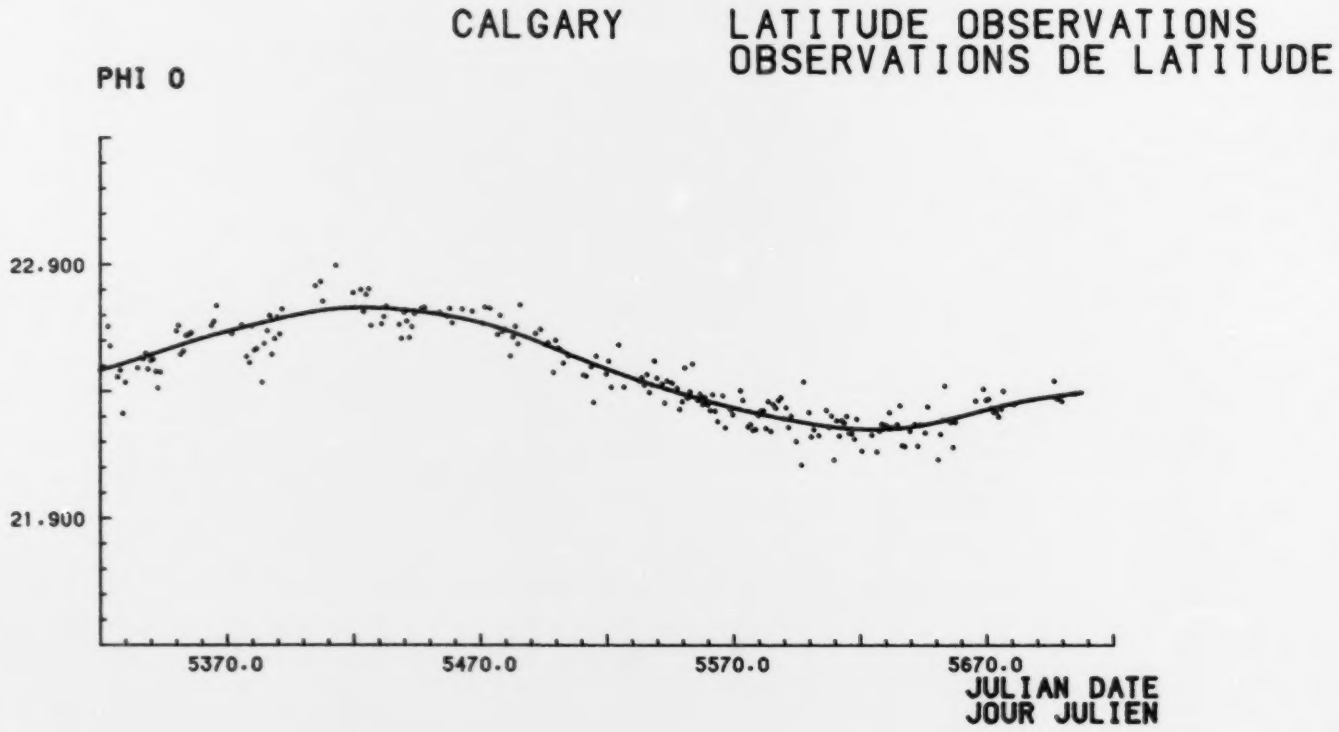

Figure 2d. Individual night observations of latitude with the Calgary PZT in 1983 and the smoothed curve for PHI 0 (STD 0.055").

Observations individuelles nocturnes de latitude par le PZT de Calgary en 1983 et la courbe lissée pour PHI 0 (MQ 0.055").

TABLE 1A OTTAWA SB PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 45 24	SMOOTHED PHI O LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
82/ 7/30	5180.701	19	5519	5569	-50	.909	.903	.006
82/ 8/ 1	5182.687	20	5551	5539	13	.857	.899	-.043
82/ 8/ 3	5184.692	21	5572	5508	64	.943	.896	.047
82/ 8/ 6	5187.697	21	5506	5462	44	.897	.892	.005
82/ 8/ 7	5188.686	18	5484	5446	38	.909	.891	.018
82/ 8/10	5191.698	21	5385	5400	-14	.821	.888	-.067
82/ 8/13	5194.760	10	5345	5352	-7	.961	.885	.076
82/ 8/15	5196.730	22	5318	5321	-2	.856	.884	-.028
82/ 8/16	5197.717	20	5337	5305	32	.892	.883	.008
82/ 8/17	5198.741	13	5270	5289	-19	.824	.883	-.059
82/ 8/18	5199.725	22	5208	5273	-65	.850	.882	-.033
82/ 8/19	5200.748	18	5210	5257	-47	.875	.882	-.006
82/ 8/20	5201.715	22	5057	5241	-185	.837	.881	-.045
82/ 8/21	5202.702	24	5184	5225	-42	.982	.881	.101
82/ 8/22	5203.694	25	5171	5209	-38	.895	.880	.015
82/ 8/24	5205.729	14	5158	5176	-18	.890	.879	.011
82/ 8/26	5207.715	20	5176	5143	32	.905	.879	.026
82/ 8/27	5208.715	20	5154	5127	27	.840	.878	-.039
82/ 8/28	5209.715	20	5016	5110	-94	.873	.878	-.005
82/ 8/29	5210.706	17	5116	5094	23	.865	.878	-.013
82/ 8/30	5211.640	5	5143	5078	65	.890	.877	.013
82/ 8/31	5212.663	12	5105	5061	44	.896	.877	.019
82/ 9/ 1	5213.731	22	5027	5043	-15	.892	.877	.016
82/ 9/ 4	5216.781	12	5094	4990	103	.942	.876	.066
82/ 9/ 5	5217.724	25	5041	4974	67	.910	.875	.034
82/ 9/ 7	5219.733	22	5048	4938	110	.838	.875	-.036
82/ 9/ 8	5220.727	27	4866	4920	-54	.823	.874	-.051
82/ 9/ 9	5221.726	25	4941	4903	38	.899	.874	.025
82/ 9/10	5222.747	23	4880	4884	-4	.866	.873	-.007
82/ 9/11	5223.747	23	4886	4866	20	.891	.873	.018
82/ 9/12	5224.717	27	4858	4848	9	.870	.873	-.003
82/ 9/13	5225.683	18	4878	4830	47	.938	.872	.066
82/ 9/14	5226.710	27	4839	4811	28	.889	.872	.017
82/ 9/19	5231.700	27	4759	4717	41	.899	.869	.030
82/ 9/20	5232.701	28	4721	4698	24	.861	.869	-.007
82/ 9/22	5234.690	27	4648	4659	-12	.914	.868	.047
82/ 9/23	5235.588	12	4628	4642	-14	.771	.867	-.096
82/ 9/24	5236.767	19	4609	4618	-9	.891	.866	.025
82/ 9/29	5241.690	30	4513	4520	-7	.903	.863	.039
82/ 9/30	5242.678	28	4550	4500	50	.882	.863	.019
82/10/ 1	5243.671	25	4498	4480	18	.816	.862	-.046
82/10/ 2	5244.664	25	4428	4460	-31	.863	.861	.001
82/10/ 3	5245.680	30	4414	4439	-25	.844	.861	-.016
82/10/ 4	5246.826	9	4520	4415	105	.849	.860	-.012
82/10/ 5	5247.673	30	4377	4398	-21	.893	.860	.034
82/10/ 6	5248.682	32	4357	4377	-20	.862	.859	.003
82/10/10	5252.776	28	4271	4292	-21	.835	.857	-.022
82/10/11	5253.708	38	4275	4273	2	.843	.857	-.014
82/10/14	5256.798	11	4214	4208	6	.843	.856	-.013
82/10/16	5258.574	14	4156	4171	-15	.823	.855	-.032
82/10/17	5259.717	31	4103	4147	-44	.834	.855	-.021
82/10/18	5260.710	20	4115	4126	-12	.885	.855	.030
82/10/23	5265.800	11	4004	4019	-15	.852	.855	-.003
82/10/24	5266.728	33	4000	4000	0	.845	.855	-.011
82/10/25	5267.706	36	3993	3979	14	.889	.856	.033
82/10/26	5268.711	32	3887	3958	-71	.819	.856	-.037
82/10/27	5269.705	34	3892	3937	-45	.801	.856	-.055
82/10/28	5270.740	28	3923	3916	7	.818	.857	-.039
82/10/30	5272.838	12	3873	3871	1	.747	.858	-.111
82/11/ 6	5279.672	20	3733	3727	6	.967	.863	.104
82/11/ 8	5281.553	12	3683	3688	-4	.889	.865	.023
82/11/14	5287.719	39	3525	3556	-32	.865	.873	-.008
82/11/16	5289.698	35	3499	3514	-15	.891	.875	.016
82/11/18	5291.724	37	3496	3470	26	.924	.878	.046

TABLE 1A OTTAWA S8 PZT TIME AND LATITUDE OBSERVATIONS
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 45 24	SMOOTHED PHI 0 LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
82/ 1/ 2	4971.804	27	246	235	11	1.019	1.120	-.102
82/ 1/ 6	4975.618	28	167	153	14	1.202	1.127	.075
82/ 1/10	4979.774	12	91	64	26	1.226	1.134	.092
82/ 1/12	4981.646	17	56	25	31	1.190	1.137	.053
82/ 1/13	4982.605	21	-37	4	-41	1.153	1.138	.015
82/ 1/16	4985.624	23	-140	-60	-80	1.134	1.143	-.009
82/ 1/18	4987.699	35	-163	-104	-59	1.094	1.146	-.052
82/ 1/19	4988.893	12	-179	-129	-50	1.071	1.147	-.076
82/ 1/21	4990.632	26	-199	-166	-33	1.121	1.150	-.029
82/ 1/22	4991.716	17	-225	-189	-36	1.192	1.151	.041
82/ 1/23	4992.571	18	-216	-207	-9	1.218	1.152	.066
82/ 1/25	4994.757	31	-226	-254	28	1.173	1.155	.017
82/ 1/26	4995.694	35	-226	-274	49	1.149	1.157	-.008
82/ 1/27	4996.700	36	-323	-296	-27	1.174	1.158	.016
82/ 1/29	4998.771	16	-257	-340	83	1.206	1.161	.046
82/ 1/31	5000.850	8	-300	-385	85	1.192	1.163	.029
82/ 2/ 2	5002.709	36	-397	-425	28	1.178	1.166	.013
82/ 2/ 5	5005.659	23	-490	-489	-1	1.090	1.169	-.079
82/ 2/ 7	5007.672	18	-492	-533	42	1.168	1.172	-.004
82/ 2/10	5010.930	6	-584	-605	21	1.011	1.176	-.165
82/ 2/11	5011.612	23	-621	-620	0	1.116	1.177	-.061
82/ 2/12	5012.752	18	-674	-646	-29	1.202	1.178	.024
82/ 2/13	5013.661	24	-636	-666	30	1.146	1.179	-.033
82/ 2/14	5014.649	20	-767	-688	-79	1.106	1.181	-.074
82/ 2/15	5015.619	15	-714	-710	-4	1.223	1.182	.041
82/ 2/17	5017.708	34	-712	-757	45	1.165	1.184	-.019
82/ 2/18	5018.723	33	-807	-781	-26	1.239	1.186	.053
82/ 2/19	5019.530	8	-750	-799	49	1.140	1.187	-.047
82/ 2/22	5022.778	24	-847	-874	27	1.235	1.190	.045
82/ 2/23	5023.595	16	-921	-893	-27	1.166	1.191	-.025
82/ 2/24	5024.679	26	-947	-918	-29	1.139	1.193	-.053
82/ 2/25	5025.731	29	-932	-943	11	1.210	1.194	.017
82/ 2/26	5026.710	32	-949	-966	18	1.183	1.195	-.012
82/ 2/27	5027.823	14	-975	-993	17	1.231	1.196	.035
82/ 2/28	5028.645	25	-981	-1012	31	1.188	1.197	-.009
82/ 3/ 1	5029.656	19	-1050	-1036	-13	1.301	1.198	.103
82/ 3/ 3	5031.682	32	-1114	-1085	-29	1.247	1.200	.047
82/ 3/ 4	5032.618	21	-1114	-1108	-6	1.181	1.201	-.020
82/ 3/ 6	5034.766	16	-1088	-1160	72	1.148	1.203	-.055
82/ 3/ 9	5037.600	6	-1353	-1230	-123	1.278	1.205	.073
82/ 3/15	5043.730	25	-1453	-1383	-70	1.212	1.210	.002
82/ 3/16	5044.708	30	-1456	-1408	-48	1.209	1.210	-.001
82/ 3/18	5046.701	30	-1455	-1459	4	1.191	1.211	-.019
82/ 3/20	5048.759	24	-1466	-1512	46	1.203	1.212	-.009
82/ 3/23	5051.710	30	-1577	-1589	11	1.247	1.212	.034
82/ 3/24	5052.702	29	-1575	-1615	39	1.242	1.212	.029
82/ 3/25	5053.758	13	-1708	-1642	-66	1.197	1.212	-.015
82/ 3/28	5056.704	29	-1712	-1720	8	1.219	1.212	.007
82/ 3/29	5057.683	26	-1743	-1746	3	1.159	1.212	-.053
82/ 3/30	5058.693	23	-1762	-1773	11	1.190	1.212	-.022
82/ 4/ 2	5061.726	24	-1764	-1854	90	1.116	1.211	-.095
82/ 4/ 3	5062.671	21	-1883	-1879	-4	1.263	1.211	.053
82/ 4/ 6	5065.704	16	-1965	-1961	-5	1.291	1.209	.082
82/ 4/ 7	5066.719	15	-2056	-1988	-68	1.033	1.208	-.175
82/ 4/ 8	5067.700	17	-2019	-2015	-4	1.290	1.207	.082
82/ 4/ 9	5068.740	25	-2065	-2043	-22	1.272	1.207	.065
82/ 4/10	5069.725	26	-2110	-2070	-41	1.218	1.206	.012
82/ 4/11	5070.648	16	-2134	-2095	-40	1.230	1.205	.025
82/ 4/13	5072.590	8	-2091	-2147	57	1.266	1.203	.062
82/ 4/14	5073.688	10	-2173	-2177	4	1.182	1.202	-.020
82/ 4/15	5074.707	24	-2181	-2205	24	1.206	1.201	.005
82/ 4/16	5075.714	24	-2149	-2232	83	1.244	1.200	.045
82/ 4/19	5078.707	25	-2288	-2314	26	1.213	1.196	.017
82/ 4/22	5081.728	17	-2339	-2396	57	1.232	1.191	.041

TABLE 1A OTTAWA S8 PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (U)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 45 24	SMOOTHED PHI O LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
82/ 4/23	5082.704	22	-2408	-2422	14	1.196	1.190	.006
82/ 4/25	5084.699	21	-2457	-2476	19	1.128	1.186	-.058
82/ 4/26	5085.644	13	-2483	-2501	18	1.218	1.185	.034
82/ 4/28	5087.695	23	-2632	-2556	-76	1.063	1.181	-.118
82/ 4/29	5088.683	19	-2556	-2583	27	1.159	1.179	-.020
82/ 4/30	5089.723	29	-2654	-2611	-44	1.151	1.177	-.027
82/ 5/ 1	5090.731	27	-2623	-2637	14	1.152	1.176	-.023
82/ 5/ 2	5091.736	26	-2674	-2664	-10	1.147	1.174	-.027
82/ 5/ 3	5092.805	14	-2712	-2692	-20	1.129	1.171	-.043
82/ 5/ 4	5093.721	25	-2711	-2716	6	1.192	1.169	.023
82/ 5/ 5	5094.721	27	-2764	-2743	-21	1.182	1.167	.015
82/ 5/ 6	5095.651	9	-2772	-2767	-5	1.230	1.165	.065
82/ 5/ 7	5096.727	23	-2784	-2795	11	1.236	1.163	.073
82/ 5/10	5099.735	23	-2970	-2873	-97	1.093	1.156	-.064
82/ 5/11	5100.725	24	-2885	-2898	12	1.162	1.154	.008
82/ 5/13	5102.692	9	-2930	-2948	18	1.137	1.149	-.012
82/ 5/14	5103.724	25	-2992	-2974	-18	1.158	1.146	.011
82/ 5/15	5104.719	24	-2982	-2998	16	1.128	1.144	-.016
82/ 5/16	5105.590	5	-2923	-3020	97	1.215	1.142	.073
82/ 5/17	5106.729	20	-3054	-3048	-6	1.183	1.139	.044
82/ 5/18	5107.705	11	-3069	-3072	3	1.213	1.136	.077
82/ 5/19	5108.722	22	-3041	-3097	56	1.160	1.133	.027
82/ 5/20	5109.790	10	-3073	-3123	50	1.134	1.130	.004
82/ 5/21	5110.732	19	-3138	-3145	7	1.001	1.128	-.127
82/ 5/22	5111.729	15	-3178	-3169	-9	1.127	1.125	.002
82/ 5/23	5112.670	10	-3230	-3191	-39	1.116	1.122	-.006
82/ 5/26	5115.725	20	-3249	-3263	14	1.124	1.113	.010
82/ 5/30	5119.710	18	-3345	-3353	8	1.100	1.101	-.001
82/ 6/ 4	5124.706	18	-3573	-3463	-110	1.066	1.084	-.018
82/ 6/ 7	5127.740	10	-3527	-3527	0	1.153	1.074	.079
82/ 6/ 8	5128.699	17	-3543	-3546	3	1.108	1.070	.038
82/ 6/ 9	5129.696	18	-3625	-3567	-58	1.098	1.067	.031
82/ 6/10	5130.696	18	-3587	-3587	1	1.071	1.063	.007
82/ 6/12	5132.696	16	-3591	-3627	36	1.024	1.056	-.032
82/ 6/15	5135.720	19	-3673	-3687	13	1.057	1.045	.012
82/ 6/22	5142.723	21	-3802	-3817	15	1.020	1.018	.002
82/ 6/23	5143.706	10	-3788	-3835	47	1.032	1.014	.018
82/ 6/24	5144.718	21	-3883	-3853	-30	1.038	1.010	.028
82/ 6/28	5148.740	11	-3972	-3923	-49	1.037	.995	.042
82/ 6/29	5149.721	16	-3981	-3940	-40	1.036	.991	.045
82/ 6/30	5150.670	8	-3860	-3956	96	.965	.988	-.023
82/ 7/ 1	5151.721	17	6037	6026	11	.972	.984	-.012
82/ 7/ 2	5152.704	19	5994	6010	-15	.989	.980	.009
82/ 7/ 3	5153.700	18	5954	5993	-39	.932	.977	-.045
82/ 7/ 4	5154.726	13	5984	5976	8	.922	.973	-.051
82/ 7/ 5	5155.730	20	5872	5959	-87	.985	.970	.015
82/ 7/ 6	5156.720	20	5941	5943	-2	1.007	.966	.040
82/ 7/ 7	5157.720	20	5912	5927	-16	.960	.963	-.003
82/ 7/ 8	5158.720	20	5877	5911	-34	.951	.959	-.008
82/ 7/ 9	5159.722	18	5952	5895	57	.982	.956	.026
82/ 7/10	5160.650	10	5965	5880	85	.956	.953	.003
82/ 7/11	5161.710	20	5836	5863	-27	1.007	.950	.057
82/ 7/12	5162.747	6	5879	5847	32	.930	.946	-.016
82/ 7/15	5165.700	20	5843	5800	42	.890	.937	-.048
82/ 7/16	5166.700	20	5777	5785	-8	.932	.935	-.003
82/ 7/17	5167.690	20	5796	5769	26	.924	.932	-.008
82/ 7/18	5168.750	10	5760	5753	7	.917	.929	-.012
82/ 7/20	5170.690	20	5734	5723	11	.876	.924	-.048
82/ 7/21	5171.688	17	5791	5707	83	.862	.921	-.060
82/ 7/22	5172.683	19	5676	5692	-17	.874	.919	-.045
82/ 7/24	5174.681	18	5742	5661	81	.902	.914	-.012
82/ 7/26	5176.800	7	5651	5629	22	.809	.910	-.101
82/ 7/27	5177.711	19	5572	5615	-43	.929	.908	.021
82/ 7/28	5178.620	6	5668	5601	67	.911	.906	.005

TABLE 1A OTTAWA S8 PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 45 24	SMOOTHED PHI O LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
82/11/19	5292.719	37	3482	3449	33	.901	.880	.021
82/11/20	5293.724	33	3466	3427	39	.865	.881	-.016
82/11/22	5295.826	20	3389	3381	8	.869	.885	-.016
82/11/23	5296.586	11	3385	3364	21	.923	.886	.037
82/11/25	5298.586	15	3333	3320	13	.942	.889	.053
82/11/27	5300.767	27	3302	3272	30	.762	.893	-.130
82/11/28	5301.683	29	3249	3251	-3	1.002	.894	.107
82/12/ 5	5308.618	27	3105	3094	10	.845	.907	-.062
82/12/ 7	5310.717	31	3070	3046	24	.893	.910	-.017
82/12/ 8	5311.685	38	3038	3023	14	.901	.912	-.011
82/12/12	5315.657	23	2869	2930	-61	.965	.920	.045
82/12/18	5321.705	39	2804	2786	18	.931	.932	-.001
82/12/22	5325.705	37	2697	2689	8	.938	.940	-.002
82/12/27	5331.500	9	2588	2547	42	1.027	.952	.075
82/12/31	5334.691	20	2492	2467	25	.942	.959	-.017

TABLE 1A OTTAWA SR PZT TIME AND LATITUDE OBSERVATIONS
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 45 24	SMOOTHED PHI 0 LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
83/ 1/ 3	5337.886	8	2438	2381	57	.973	.979	-.007
83/ 1/ 4	5338.677	34	2267	2360	-93	.964	.982	-.018
83/ 1/ 9	5343.687	38	2179	2226	-47	.968	.999	-.031
83/ 1/10	5344.539	14	2228	2203	25	1.052	1.002	.049
83/ 1/13	5347.708	39	2162	2117	45	.982	1.014	-.032
83/ 1/16	5350.878	16	2106	2030	76	.987	1.025	-.038
83/ 1/19	5353.870	7	2092	1947	145	.950	1.035	-.085
83/ 1/20	5354.717	30	1967	1923	44	1.081	1.039	.043
83/ 1/21	5355.708	41	1887	1895	-8	1.080	1.042	.038
83/ 1/26	5360.737	27	1777	1752	25	1.019	1.060	-.041
83/ 2/ 2	5367.553	12	1574	1554	20	1.072	1.084	-.012
83/ 2/ 5	5370.775	22	1402	1459	-57	1.116	1.096	.020
83/ 2/ 6	5371.695	37	1389	1432	-42	1.105	1.099	.006
83/ 2/ 7	5372.602	23	1383	1405	-22	1.133	1.102	.031
83/ 2/ 9	5374.618	14	1321	1345	-23	1.162	1.109	.053
83/ 2/10	5375.649	25	1340	1314	26	1.070	1.113	-.043
83/ 2/11	5376.699	36	1271	1282	-11	1.138	1.116	.021
83/ 2/12	5377.698	26	1231	1252	-22	1.180	1.120	.060
83/ 2/13	5378.712	30	1196	1222	-26	1.168	1.123	.045
83/ 2/16	5381.731	31	1143	1131	12	1.098	1.134	-.036
83/ 2/18	5383.844	15	1084	1067	17	1.054	1.141	-.087
83/ 2/19	5384.700	30	1088	1041	47	1.093	1.144	-.051
83/ 2/20	5385.765	24	1038	1008	30	1.246	1.148	.098
83/ 2/22	5387.685	32	962	950	12	1.130	1.154	-.024
83/ 2/25	5390.655	17	876	859	17	1.132	1.164	-.033
83/ 2/26	5391.780	10	875	824	51	1.268	1.168	.100
83/ 2/27	5392.618	10	766	798	-32	1.166	1.171	-.005
83/ 3/ 1	5394.760	30	690	732	-42	1.158	1.178	-.021
83/ 3/ 2	5395.670	25	682	704	-22	1.155	1.181	-.027
83/ 3/ 4	5397.724	29	617	641	-24	1.189	1.188	.001
83/ 3/ 5	5398.766	28	578	609	-30	1.223	1.192	.031
83/ 3/ 6	5399.728	33	608	579	29	1.207	1.195	.011
83/ 3/13	5406.732	26	399	362	37	1.162	1.219	-.056
83/ 3/14	5407.732	28	371	331	40	1.172	1.222	-.051
83/ 3/16	5409.815	16	257	266	-9	1.061	1.229	-.168
83/ 3/17	5410.673	22	228	240	-11	1.232	1.232	.000
83/ 3/18	5411.699	21	235	208	27	1.262	1.235	.027
83/ 3/25	5418.680	21	-8	-7	-1	1.184	1.257	-.073
83/ 3/26	5419.734	10	-43	-40	-4	1.079	1.260	-.181
83/ 3/27	5420.672	23	-38	-68	31	1.317	1.262	.054
83/ 3/30	5423.703	27	-196	-161	-35	1.277	1.271	.006
83/ 3/31	5424.698	27	-246	-191	-55	1.393	1.273	.120
83/ 4/ 1	5425.714	24	-221	-222	2	1.310	1.276	.034
83/ 4/ 2	5426.692	28	-309	-252	-57	1.377	1.278	.100
83/ 4/ 6	5430.670	9	-376	-373	-3	1.235	1.286	-.051
83/ 4/ 7	5431.665	12	-411	-403	-9	1.290	1.288	.001
83/ 4/ 9	5433.700	21	-506	-464	-43	1.393	1.292	.101
83/ 4/10	5434.624	8	-490	-491	1	1.285	1.293	-.008
83/ 4/13	5437.715	28	-528	-584	56	1.267	1.298	-.031
83/ 4/18	5442.712	27	-716	-732	16	1.299	1.303	-.004
83/ 4/19	5443.714	26	-735	-761	27	1.259	1.304	-.045
83/ 4/22	5446.824	7	-792	-853	60	1.240	1.306	-.066
83/ 4/23	5447.721	15	-845	-879	34	1.284	1.307	-.023
83/ 4/27	5451.707	24	-979	-995	16	1.343	1.308	.036
83/ 4/28	5452.716	21	-1102	-1024	-79	1.310	1.308	.002
83/ 4/30	5454.850	6	-1091	-1085	-6	1.291	1.308	-.017
83/ 5/ 5	5459.672	18	-1200	-1223	22	1.338	1.307	.031
83/ 5/ 6	5460.726	26	-1217	-1252	35	1.301	1.306	-.005
83/ 5/12	5466.743	20	-1412	-1420	7	1.301	1.302	-.001
83/ 5/13	5467.709	22	-1423	-1446	23	1.302	1.301	.001
83/ 5/14	5468.724	25	-1497	-1474	-23	1.284	1.300	-.017
83/ 5/16	5470.710	24	-1534	-1528	-6	1.145	1.298	-.153
83/ 5/17	5471.715	24	-1558	-1555	-3	1.292	1.297	-.006
83/ 5/18	5472.713	24	-1545	-1582	37	1.315	1.296	.019

TABLE 1A OTTAWA S8 PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 45 24	SMOOTHED PHI O LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
83/ 5/21	5475.693	16	-1641	-1661	20	1.317	1.293	.025
83/ 5/22	5476.721	22	-1688	-1688	0	1.323	1.291	.032
83/ 5/25	5479.725	20	-1802	-1766	-37	1.301	1.287	.014
83/ 5/28	5482.712	15	-1819	-1842	23	1.232	1.282	-.050
83/ 5/29	5483.770	8	-1812	-1868	56	1.354	1.280	.074
83/ 6/ 1	5486.770	6	-1896	-1942	46	1.234	1.275	-.041
83/ 6/ 2	5487.716	18	-1952	-1965	13	1.246	1.273	-.027
83/ 6/ 5	5490.719	13	-1988	-2037	49	1.178	1.267	-.089
83/ 6/ 6	5491.630	7	-2056	-2059	3	1.253	1.265	-.012
83/ 6/ 7	5492.692	13	-2085	-2084	-2	1.302	1.262	.040
83/ 6/ 8	5493.696	18	-2085	-2107	22	1.282	1.260	.022
83/ 6/ 9	5494.688	17	-2156	-2130	-27	1.297	1.258	.039
83/ 6/10	5495.708	10	-2093	-2153	60	1.333	1.255	.078
83/ 6/11	5496.690	16	-2213	-2175	-37	1.260	1.253	.007
83/ 6/12	5497.690	7	-2248	-2198	-51	1.206	1.250	-.044
83/ 6/13	5498.673	14	-2286	-2219	-67	1.342	1.247	.095
83/ 6/14	5499.705	21	-2226	-2242	16	1.241	1.245	-.003
83/ 6/15	5500.705	22	-2293	-2264	-29	1.233	1.242	-.009
83/ 6/16	5501.700	22	-2284	-2285	2	1.287	1.239	.048
83/ 6/21	5506.724	22	-2426	-2390	-36	1.261	1.224	.037
83/ 6/22	5507.719	20	-2470	-2410	-60	1.277	1.221	.056
83/ 6/23	5508.717	22	-2500	-2430	-69	1.226	1.218	.008
83/ 6/24	5509.721	20	-2509	-2450	-59	1.223	1.215	.008
83/ 6/25	5510.732	17	-2523	-2470	-53	1.133	1.212	-.079
83/ 6/26	5511.663	15	-2494	-2489	-5	1.243	1.209	.034
83/ 6/28	5513.728	9	-2567	-2528	-39	1.233	1.202	.031
83/ 6/29	5514.707	22	-2469	-2547	78	1.230	1.199	.032
83/ 7/ 1	5516.660	7	7509	7416	93	1.141	1.192	-.051
83/ 7/ 2	5517.698	17	7313	7397	-84	1.159	1.189	-.030
83/ 7/ 3	5518.743	12	7322	7378	-57	1.235	1.185	.050
83/ 7/ 4	5519.713	23	7355	7360	-6	1.231	1.182	.049
83/ 7/ 7	5522.720	20	7319	7307	12	1.096	1.172	-.076
83/ 7/ 8	5523.660	10	7342	7290	52	1.126	1.168	-.042
83/ 7/ 9	5524.730	15	7289	7271	18	1.158	1.165	-.006
83/ 7/10	5525.710	20	7278	7254	23	1.135	1.162	-.027
83/ 7/11	5526.706	17	7298	7237	61	1.167	1.158	.009
83/ 7/12	5527.707	19	7255	7220	35	1.105	1.155	-.050
83/ 7/13	5528.705	20	7193	7203	-10	1.125	1.151	-.027
83/ 7/14	5529.697	19	7195	7186	9	1.139	1.148	-.009
83/ 7/16	5531.700	20	7154	7152	2	1.106	1.141	-.035
83/ 7/17	5532.693	19	7144	7135	9	1.032	1.138	-.106
83/ 7/18	5533.770	6	7089	7117	-28	1.108	1.135	-.027
83/ 7/19	5534.687	19	7077	7102	-26	1.109	1.132	-.022
83/ 7/20	5535.750	10	7063	7085	-22	1.215	1.128	.087
83/ 7/21	5536.680	20	7076	7069	7	1.104	1.125	-.022
83/ 7/22	5537.680	20	7091	7053	38	1.137	1.122	.015
83/ 7/23	5538.680	20	7056	7037	19	1.087	1.119	-.032
83/ 7/27	5542.697	24	7042	6971	70	1.111	1.106	.005
83/ 7/28	5543.720	15	6957	6955	2	1.092	1.103	-.011
83/ 7/31	5546.698	19	6877	6907	-29	1.174	1.093	.081
83/ 8/ 6	5552.703	22	6788	6810	-21	1.094	1.074	.020
83/ 8/ 7	5553.698	21	6834	6794	40	1.068	1.071	-.003
83/ 8/ 8	5554.690	23	6845	6778	67	1.062	1.068	-.006
83/ 8/ 9	5555.751	16	6757	6761	-4	1.106	1.064	.042
83/ 8/10	5556.701	25	6719	6745	-26	1.049	1.061	-.012
83/ 8/11	5557.764	15	6734	6728	6	1.099	1.058	.041
83/ 8/12	5558.742	18	6710	6712	-1	1.089	1.055	.035
83/ 8/13	5559.705	20	6625	6696	-71	1.047	1.052	-.005
83/ 8/14	5560.703	27	6657	6680	-23	1.037	1.048	-.011
83/ 8/15	5561.570	7	6693	6666	27	1.055	1.045	.010
83/ 8/16	5562.735	12	6593	6647	-54	1.067	1.042	.025
83/ 8/19	5565.695	26	6594	6598	-4	1.027	1.032	-.005
83/ 8/22	5568.620	7	6580	6549	30	1.096	1.022	.075
83/ 8/23	5569.712	18	6594	6531	63	1.021	1.018	.004

TABLE 1A OTTAWA SB PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 45 24	SMOOTHED PHI O LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
83/ 8/24	5570.709	20	6527	6515	13	.968	1.014	-.046
83/ 8/26	5572.710	17	6522	6481	41	1.024	1.007	.017
83/ 8/27	5573.750	9	6444	6463	-19	1.034	1.003	.030
83/ 8/28	5574.715	20	6483	6447	35	.955	1.000	-.045
83/ 8/29	5575.706	19	6363	6430	-68	.961	.996	-.035
83/ 8/30	5576.709	17	6404	6413	-9	1.014	.993	.021
83/ 8/31	5577.713	18	6389	6396	-8	.985	.989	-.004
83/ 9/ 1	5578.734	25	6339	6379	-40	.920	.985	-.065
83/ 9/ 2	5579.720	21	6378	6362	17	1.017	.982	.035
83/ 9/ 3	5580.741	23	6311	6344	-33	.979	.978	.001
83/ 9/ 4	5581.733	24	6344	6327	17	.939	.974	-.036
83/ 9/ 5	5582.724	25	6292	6310	-17	.947	.971	-.024
83/ 9/ 6	5583.722	25	6316	6293	23	1.020	.967	.053
83/ 9/ 7	5584.610	5	6243	6277	-34	1.046	.963	.083
83/ 9/ 8	5585.730	23	6277	6257	20	.988	.959	.029
83/ 9/ 9	5586.722	26	6236	6240	-4	1.025	.955	.069
83/ 9/11	5588.661	16	6192	6206	-13	.960	.948	.012
83/ 9/12	5589.731	24	6233	6187	47	.973	.944	.029
83/ 9/13	5590.721	28	6172	6169	3	.946	.940	.006
83/ 9/14	5591.695	22	6128	6152	-24	.852	.936	-.085
83/ 9/15	5592.708	26	6177	6134	44	1.006	.932	.073
83/ 9/16	5593.617	11	6103	6117	-14	.872	.929	-.057
83/ 9/18	5595.570	6	6171	6082	89	.940	.921	.019
83/ 9/19	5596.830	7	5966	6059	-93	.937	.916	.021
83/ 9/21	5598.775	11	6042	6024	18	.908	.909	-.001
83/ 9/25	5602.680	27	6017	5952	65	.932	.894	.038
83/ 9/27	5604.624	7	5971	5916	55	.885	.887	-.002
83/ 9/29	5606.703	32	5836	5877	-41	.843	.879	-.036
83/ 9/30	5607.703	32	5784	5858	-75	.862	.875	-.013
83/10/ 1	5608.696	32	5785	5840	-55	.853	.872	-.019
83/10/ 3	5610.681	11	5833	5802	30	.832	.865	-.033
83/10/ 7	5614.540	5	5614	5729	-115	.765	.852	-.087
83/10/ 9	5616.797	23	5662	5685	-23	.870	.845	.025
83/10/10	5617.695	35	5635	5668	-33	.874	.842	.032
83/10/11	5618.697	36	5663	5649	14	.814	.839	-.024
83/10/16	5623.759	28	5578	5549	29	.838	.824	.013
83/10/18	5625.633	23	5557	5512	44	.876	.819	.056
83/10/19	5626.760	22	5515	5490	25	.814	.817	-.002
83/10/20	5627.682	29	5507	5472	35	.813	.815	-.002
83/10/21	5628.699	22	5419	5451	-33	.803	.812	-.009
83/10/22	5629.683	23	5467	5431	36	.785	.810	-.025
83/10/25	5632.595	19	5464	5373	92	.836	.804	.032
83/10/25	5633.490	6	5246	5355	-109	.684	.803	-.119
83/10/30	5637.688	33	5317	5269	48	.769	.796	-.027
83/10/31	5638.709	19	5290	5248	42	.746	.795	-.049
83/11/ 1	5639.678	33	5218	5228	-10	.770	.793	-.023
83/11/ 1	5640.470	6	5199	5212	-13	.608	.793	-.185
83/11/ 7	5645.850	6	4984	5101	-117	.709	.788	-.079
83/11/ 8	5646.677	29	5055	5084	-29	.822	.788	.035
83/11/ 9	5647.776	5	5017	5061	-44	.661	.787	-.126
83/11/13	5651.528	8	4932	4984	-52	.688	.786	-.098
83/11/14	5652.705	34	4924	4959	-35	.772	.786	-.013
83/11/15	5653.672	23	4996	4939	57	.872	.786	.087
83/11/19	5657.702	27	4861	4857	4	.828	.786	.041
83/11/26	5664.787	10	4702	4714	-11	.801	.789	.012
83/11/27	5665.720	31	4665	4695	-30	.777	.790	-.012
83/11/30	5669.500	6	4656	4620	36	.676	.792	-.116
83/12/ 4	5672.661	30	4514	4558	-44	.858	.794	.063
83/12/ 9	5677.760	6	4450	4460	-11	.795	.798	-.004
83/12/21	5689.653	19	4296	4242	54	.787	.808	-.021
83/12/24	5692.541	14	4158	4191	-33	.846	.811	.035
83/12/25	5693.517	11	4239	4174	65	.776	.812	-.036
83/12/26	5694.589	22	4163	4155	8	.788	.813	-.025
83/12/30	5698.544	18	4071	4087	-16	.916	.817	.099

TABLE 1A OTTAWA S8 PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 45 24	SMOOTHED PHI O LISSE 45 24	PHI RES.
1	2	3	4	5	6	7	8	9
83/12/31	5699.620	14	4052	4069	-17	.963	.818	.145

TABLE 1B CALGARY PZT TIME AND LATITUDE OBSERVATIONS
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 50 52	SMOOTHED PHI O LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
82/ 1/ 1	4970.660	9	248	111	137	22.987	22.661	.326
82/ 1/ 2	4971.840	38	301	84	217	22.623	22.664	-.041
82/ 1/ 3	4972.780	29	201	61	139	22.695	22.666	.030
82/ 1/ 4	4973.818	25	-21	37	-58	22.455	22.667	-.213
82/ 1/ 6	4975.803	25	-4	-10	5	22.642	22.671	-.028
82/ 1/ 9	4978.640	7	-268	-76	-192	22.879	22.674	.205
82/ 1/13	4982.845	15	-475	-175	-300	22.501	22.678	-.177
82/ 1/14	4983.789	28	-242	-197	-45	22.631	22.678	-.047
82/ 1/16	4985.758	39	-361	-243	-118	22.755	22.679	.076
82/ 1/17	4986.758	26	-512	-266	-46	22.885	22.679	.206
82/ 1/19	4988.775	42	-393	-312	-81	22.796	22.679	.117
82/ 1/25	4994.754	39	-439	-450	10	22.555	22.676	-.122
82/ 1/26	4996.028	10	-258	-479	220	22.553	22.675	-.122
82/ 1/28	4997.805	31	-432	-519	86	22.576	22.674	-.097
82/ 1/29	4998.816	23	-523	-542	19	22.648	22.673	-.025
82/ 1/30	4999.817	18	-626	-564	-62	22.698	22.671	.026
82/ 1/31	5000.764	25	-555	-586	31	22.568	22.670	-.103
82/ 2/ 1	5001.837	44	-544	-610	66	22.694	22.669	.025
82/ 2/ 4	5004.832	26	-769	-677	-92	22.879	22.665	.214
82/ 2/ 5	5005.751	21	-769	-698	-72	22.649	22.664	-.015
82/ 2/ 8	5008.806	19	-741	-766	25	22.702	22.659	.042
82/ 2/ 9	5009.779	32	-855	-788	-68	22.726	22.658	.068
82/ 2/10	5010.840	24	-823	-811	-12	22.562	22.656	-.094
82/ 2/16	5016.767	21	-920	-944	24	22.522	22.646	-.124
82/ 2/17	5017.797	28	-959	-967	8	22.642	22.644	-.002
82/ 2/18	5018.838	38	-1020	-991	-29	22.631	22.643	-.012
82/ 2/20	5020.797	29	-1000	-1035	35	22.689	22.639	.050
82/ 2/21	5021.738	13	-1046	-1056	10	22.509	22.638	-.129
82/ 2/25	5025.763	12	-1105	-1148	43	22.725	22.632	.093
82/ 2/28	5028.751	15	-1308	-1218	-90	22.717	22.627	.090
82/ 3/ 3	5031.758	20	-1274	-1288	14	22.661	22.623	.038
82/ 3/ 5	5033.798	38	-1408	-1337	-71	22.621	22.620	.000
82/ 3/ 6	5034.960	9	-1345	-1365	20	22.599	22.619	-.020
82/ 3/ 7	5035.719	17	-1365	-1383	18	22.342	22.618	-.276
82/ 3/11	5039.821	26	-1506	-1483	-23	22.556	22.613	-.057
82/ 3/13	5041.864	37	-1484	-1533	50	22.611	22.611	-.000
82/ 3/18	5046.970	14	-1494	-1663	169	22.549	22.606	-.057
82/ 3/20	5048.956	18	-1711	-1715	3	22.502	22.604	-.102
82/ 3/21	5049.955	16	-1667	-1741	74	22.521	22.603	-.082
82/ 3/22	5050.842	32	-1663	-1764	101	22.612	22.602	.009
82/ 3/23	5051.760	21	-1775	-1788	14	22.609	22.601	.008
82/ 3/25	5053.826	37	-1889	-1843	-46	22.734	22.600	.134
82/ 3/26	5054.838	22	-1814	-1871	57	22.662	22.599	.063
82/ 3/27	5055.788	26	-1935	-1896	-39	22.555	22.598	-.042
82/ 3/28	5056.758	22	-1912	-1923	10	22.676	22.597	.079
82/ 4/ 8	5067.824	11	-2348	-2230	-118	22.681	22.585	.096
82/ 4/11	5070.837	27	-2311	-2315	4	22.587	22.581	.006
82/ 4/14	5073.823	26	-2327	-2400	73	22.603	22.576	.027
82/ 4/23	5082.865	16	-2555	-2655	100	22.564	22.560	.005
82/ 4/26	5085.856	18	-2786	-2738	-48	22.529	22.554	-.024
82/ 4/27	5086.846	18	-2794	-2766	-28	22.524	22.552	-.028
82/ 4/28	5087.810	9	-2959	-2792	-167	22.450	22.549	-.099
82/ 4/30	5089.810	6	-2878	-2847	-31	22.650	22.545	.105
82/ 5/ 2	5091.836	18	-2870	-2902	32	22.445	22.540	-.095
82/ 5/ 3	5092.836	18	-2870	-2928	58	22.467	22.538	-.071
82/ 5/ 6	5095.826	18	-3001	-3007	6	22.557	22.530	.027
82/ 5/ 9	5098.823	17	-3037	-3084	47	22.486	22.522	-.036
82/ 5/10	5099.816	18	-3113	-3109	-4	22.539	22.519	.020
82/ 5/11	5100.810	18	-3112	-3134	23	22.511	22.516	-.006
82/ 5/12	5101.806	18	-3153	-3159	6	22.444	22.514	-.070
82/ 5/13	5102.850	8	-3041	-3185	144	22.417	22.511	-.094
82/ 5/14	5103.889	17	-3154	-3210	56	22.540	22.507	.033
82/ 5/15	5104.877	17	-3247	-3234	-14	22.444	22.504	-.060
82/ 5/17	5106.883	15	-3264	-3281	17	22.416	22.498	-.082

TABLE 18 CALGARY PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 50 52	SMOOTHED PHI 0 LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
82/ 5/18	5107.848	11	-3226	-3303	77	22.549	22.495	.054
82/ 5/20	5109.865	19	-3357	-3349	-8	22.535	22.488	.046
82/ 5/21	5110.868	16	-3344	-3371	27	22.553	22.485	.068
82/ 5/22	5111.865	19	-3537	-3393	-144	22.574	22.482	.092
82/ 5/24	5113.855	19	-3442	-3435	-7	22.520	22.474	.046
82/ 5/30	5119.839	18	-3628	-3555	-74	22.429	22.452	-.023
82/ 5/31	5120.833	18	-3615	-3573	-42	22.510	22.448	.062
82/ 6/ 1	5121.833	18	-3640	-3592	-48	22.514	22.444	.070
82/ 6/ 2	5122.831	19	-3673	-3610	-64	22.463	22.440	.022
82/ 6/ 3	5123.831	19	-3649	-3627	-22	22.498	22.436	.062
82/ 6/ 4	5124.825	19	-3712	-3644	-67	22.464	22.432	.032
82/ 6/ 8	5128.815	19	-3874	-3710	-165	22.472	22.415	.057
82/ 6/10	5130.805	19	-3859	-3740	-119	22.450	22.407	.043
82/ 6/12	5132.805	19	-3950	-3770	-180	22.432	22.398	.034
82/ 6/13	5133.820	10	-3750	-3784	34	22.371	22.394	-.023
82/ 6/14	5134.797	18	-3864	-3798	-66	22.324	22.390	-.066
82/ 6/17	5137.805	10	-3774	-3838	64	22.419	22.377	.042
82/ 6/18	5138.787	18	-3807	-3851	43	22.295	22.373	-.078
82/ 6/19	5139.785	19	-3790	-3863	73	22.297	22.369	-.072
82/ 6/20	5140.880	9	-3749	-3876	127	22.313	22.364	-.051
82/ 6/21	5141.838	13	-3810	-3888	78	22.325	22.360	-.035
82/ 6/22	5142.826	16	-3885	-3900	14	22.259	22.356	-.098
82/ 6/23	5143.848	9	-3739	-3911	172	22.322	22.352	-.030
82/ 6/24	5144.835	14	-3789	-3923	134	22.279	22.348	-.069
82/ 7/ 1	5151.813	21	5932	6002	-70	22.378	22.321	.057
82/ 7/ 4	5154.803	19	6040	5971	69	22.297	22.311	-.014
82/ 7/ 7	5157.815	12	5974	5941	33	22.230	22.301	-.071
82/ 7/ 8	5158.778	13	5949	5931	18	22.324	22.298	.026
82/ 7/ 9	5159.750	9	5777	5921	-144	22.193	22.295	-.102
82/ 7/10	5160.785	18	5698	5911	-213	22.355	22.291	.063
82/ 7/11	5161.783	19	5919	5901	18	22.333	22.289	.045
82/ 7/12	5162.785	20	5824	5890	-67	22.279	22.286	-.007
82/ 7/13	5163.862	17	5947	5879	67	22.278	22.283	-.005
82/ 7/15	5165.848	15	5978	5859	119	22.335	22.277	.057
82/ 7/17	5167.846	18	5736	5838	-102	22.327	22.272	.055
82/ 7/18	5168.840	21	5877	5828	49	22.174	22.270	-.096
82/ 7/19	5169.839	16	5930	5817	113	22.233	22.268	-.035
82/ 7/22	5172.826	19	5910	5785	125	22.260	22.261	-.002
82/ 7/23	5173.840	14	5936	5774	163	22.150	22.259	-.109
82/ 7/24	5174.835	18	5701	5762	-62	22.264	22.257	.007
82/ 7/26	5176.843	12	5752	5739	13	22.247	22.253	-.006
82/ 7/27	5177.814	21	5827	5728	99	22.220	22.252	-.031
82/ 7/28	5178.831	11	5730	5716	14	22.180	22.250	-.070
82/ 7/29	5179.820	18	5657	5704	-47	22.201	22.248	-.048
82/ 7/30	5180.812	20	5663	5692	-28	22.273	22.247	.026
82/ 7/31	5181.806	16	5783	5679	103	22.264	22.245	.019
82/ 8/ 3	5184.836	28	5637	5640	-3	22.254	22.242	.012
82/ 8/ 5	5186.840	26	5514	5613	-99	22.254	22.239	.014
82/ 8/ 7	5188.811	20	5560	5586	-26	22.300	22.237	.063
82/ 8/ 8	5189.829	30	5608	5571	37	22.260	22.236	.023
82/ 8/ 9	5190.797	24	5526	5557	-31	22.330	22.235	.095
82/ 8/13	5194.830	23	5350	5497	-147	22.275	22.232	.042
82/ 8/15	5196.806	33	5437	5465	-29	22.251	22.231	.019
82/ 8/16	5197.802	29	5364	5449	115	22.155	22.231	-.076
82/ 8/17	5198.800	33	5460	5433	27	22.238	22.230	.007
82/ 8/18	5199.796	31	5389	5416	-28	22.257	22.230	.027
82/ 8/19	5200.801	31	5411	5399	12	22.256	22.230	.026
82/ 8/20	5201.778	29	5392	5383	10	22.259	22.229	.030
82/ 8/21	5202.800	28	5423	5365	58	22.172	22.229	-.058
82/ 8/22	5203.776	19	5422	5347	74	22.132	22.229	-.098
82/ 9/ 3	5215.910	11	5192	5115	77	22.229	22.232	-.003
82/ 9/ 6	5218.822	17	5155	5055	100	22.209	22.234	-.025
82/ 9/ 7	5219.826	29	5023	5033	-11	22.252	22.235	.017
82/ 9/11	5223.811	32	4856	4948	-92	22.352	22.239	.113

TABLE 18 CALGARY PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 50 52	SMOOTHED PHI O LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
82/ 9/14	5226.860	12	4940	4881	59	22.316	22.242	.074
82/ 9/15	5227.802	31	4935	4860	75	22.170	22.244	-.074
82/ 9/18	5230.812	35	4865	4793	72	22.246	22.248	-.002
82/ 9/19	5231.820	40	4818	4771	48	22.239	22.250	-.010
82/ 9/20	5232.821	40	4755	4748	7	22.255	22.251	.004
82/ 9/21	5233.812	39	4722	4726	-4	22.236	22.253	-.017
82/ 9/22	5234.824	22	4706	4703	3	22.244	22.255	-.010
82/ 9/23	5235.846	29	4691	4680	11	22.211	22.256	-.046
82/ 9/24	5236.809	35	4567	4658	-91	22.235	22.258	-.024
82/ 9/25	5237.828	26	4543	4635	-92	22.232	22.260	-.028
82/ 9/30	5242.798	34	4632	4523	109	22.240	22.271	-.031
82/10/ 1	5243.786	22	4458	4500	-43	22.310	22.273	.037
82/10/ 4	5246.749	26	4501	4434	68	22.361	22.280	.081
82/10/ 5	5247.801	28	4462	4410	52	22.360	22.282	.077
82/10/ 6	5248.817	21	4394	4387	7	22.035	22.285	-.249
82/10/ 7	5249.925	15	4365	4363	3	22.306	22.288	.018
82/10/ 8	5250.750	27	4336	4344	-8	22.350	22.290	.060
82/10/ 9	5251.820	48	4264	4321	-57	22.291	22.292	-.001
82/10/10	5252.837	41	4226	4298	-72	22.271	22.295	-.025
82/10/11	5253.804	51	4204	4277	-73	22.247	22.298	-.051
82/10/12	5254.801	50	4102	4255	-153	22.320	22.300	.020
82/10/13	5255.795	46	4185	4234	-48	22.262	22.303	-.041
82/10/14	5256.794	51	4193	4212	-19	22.347	22.306	.042
82/10/15	5257.830	21	4234	4189	45	22.377	22.308	.068
82/10/17	5259.717	29	4210	4148	62	22.330	22.313	.017
82/10/19	5261.672	13	4071	4106	-35	22.270	22.319	-.049
82/10/20	5262.784	47	4042	4082	-40	22.361	22.322	.039
82/10/21	5263.850	6	4124	4060	64	22.425	22.325	.100
82/10/22	5264.680	5	3836	4042	-206	22.493	22.327	.166
82/10/24	5266.752	41	3919	3998	-79	22.242	22.333	-.091
82/10/26	5268.817	25	3833	3953	-120	22.336	22.338	-.002
82/10/27	5269.893	17	4020	3930	89	22.342	22.341	.000
82/10/28	5270.712	39	3955	3913	42	22.412	22.344	.068
82/10/30	5272.746	47	3791	3870	-79	22.385	22.349	.036
82/10/31	5273.747	47	3924	3848	76	22.355	22.352	.003
82/11/ 1	5274.654	22	3846	3829	17	22.460	22.355	.106
82/11/ 3	5276.735	28	3782	3784	-2	22.388	22.360	.027
82/11/ 5	5278.776	41	3774	3740	34	22.358	22.366	-.008
82/11/ 6	5279.821	39	3811	3717	94	22.372	22.369	.003
82/11/ 7	5280.847	36	3959	3695	265	22.318	22.371	-.053
82/11/ 8	5281.809	48	3984	3673	310	22.276	22.374	-.098
82/11/ 9	5282.805	48	3595	3652	-57	22.425	22.377	.048
82/11/10	5283.805	48	3533	3630	-96	22.349	22.379	-.031
82/11/12	5285.758	36	3447	3586	-139	22.422	22.385	.037
82/11/14	5287.793	44	3509	3541	-32	22.369	22.390	-.021
82/11/15	5288.745	34	3582	3519	63	22.373	22.393	-.020
82/11/17	5290.774	46	3563	3473	90	22.431	22.398	.033
82/11/18	5291.671	15	3431	3453	-22	22.394	22.400	-.007
82/11/21	5294.590	5	3180	3386	-206	22.334	22.408	-.074
82/11/22	5295.902	17	3390	3355	34	22.271	22.411	-.140
82/11/23	5296.859	40	3293	3333	-40	22.380	22.414	-.034
82/11/24	5297.769	41	3251	3312	-61	22.406	22.416	-.010
82/11/25	5298.799	52	3239	3287	-48	22.510	22.419	.091
82/11/28	5301.761	38	3222	3217	4	22.396	22.427	-.031
82/11/30	5303.702	24	3326	3171	155	22.432	22.432	.001
82/12/ 1	5304.819	9	3179	3144	35	22.462	22.435	.028
82/12/ 5	5308.774	34	2969	3049	-79	22.376	22.445	-.068
82/12/ 7	5310.733	43	3019	3001	18	22.465	22.450	.015
82/12/ 8	5311.775	49	2905	2975	-71	22.480	22.452	.027
82/12/ 9	5312.857	31	2929	2949	-20	22.401	22.455	-.054
82/12/10	5313.829	39	2898	2925	-27	22.486	22.458	.029
82/12/11	5314.795	46	2883	2901	-18	22.495	22.460	.034
82/12/14	5317.824	41	2920	2826	94	22.496	22.468	.028
82/12/15	5318.706	21	2636	2804	-168	22.528	22.470	.058

TABLE 1B CALGARY PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 50 52	SMOOTHED PHI 0 LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
82/12/19	5322.971	19	2595	2697	-102	22.655	22.482	.173
82/12/20	5323.804	34	2700	2676	24	22.578	22.484	.094
82/12/23	5326.792	45	2719	2601	119	22.456	22.493	-.037
82/12/24	5327.803	57	2548	2575	-27	22.482	22.496	-.014
82/12/25	5328.834	11	2548	2549	-1	22.311	22.499	-.188
82/12/26	5329.801	45	2582	2524	57	22.435	22.502	-.067
82/12/31	5334.730	26	2460	2398	62	22.491	22.518	-.027

TABLE 18 CALGARY PZT TIME AND LATITUDE OBSERVATIONS
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI O OBSERVE 50 52	SMOOTHED PHI O LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
83/ 1/ 2	5336.796	34	2270	2352	-83	22.527	22.532	-.005
83/ 1/ 3	5337.887	27	2250	2323	-73	22.549	22.535	.014
83/ 1/ 4	5338.718	23	2311	2301	10	22.487	22.538	-.051
83/ 1/ 5	5339.800	23	2293	2272	22	22.521	22.542	-.021
83/ 1/ 6	5340.807	31	2132	2244	-113	22.526	22.545	-.019
83/ 1/ 7	5341.920	6	2026	2214	-188	22.477	22.549	-.071
83/ 1/ 8	5342.682	15	2178	2193	-15	22.412	22.551	-.139
83/ 1/ 9	5343.667	9	2292	2166	126	22.475	22.554	-.079
83/ 1/15	5349.896	22	2044	1989	55	22.637	22.575	.062
83/ 1/16	5350.791	42	2007	1963	44	22.659	22.578	.081
83/ 1/17	5351.685	18	1982	1937	45	22.545	22.581	-.036
83/ 1/18	5352.806	38	1947	1904	42	22.558	22.584	-.027
83/ 1/19	5353.778	42	1937	1875	62	22.619	22.587	.032
83/ 1/20	5354.776	42	1866	1846	20	22.624	22.590	.033
83/ 1/21	5355.857	26	1792	1814	-22	22.630	22.594	.036
83/ 1/29	5363.808	27	1509	1573	-64	22.658	22.617	.041
83/ 1/30	5364.813	24	1552	1542	11	22.675	22.620	.055
83/ 1/31	5365.832	39	1537	1510	26	22.737	22.623	.115
83/ 2/ 6	5371.872	29	1106	1322	-217	22.626	22.638	-.012
83/ 2/10	5375.801	39	1173	1199	-26	22.660	22.648	.012
83/ 2/12	5377.748	12	1207	1137	70	22.536	22.653	-.117
83/ 2/13	5378.969	9	1059	1098	-40	22.512	22.656	-.144
83/ 2/14	5379.806	34	1077	1072	5	22.656	22.658	-.002
83/ 2/15	5380.813	30	976	1040	-63	22.562	22.661	-.099
83/ 2/16	5381.761	17	973	1010	-37	22.567	22.663	-.096
83/ 2/18	5383.876	5	1068	942	125	22.435	22.668	-.233
83/ 2/19	5384.710	8	798	916	-118	22.588	22.670	-.082
83/ 2/20	5385.869	13	866	878	-12	22.638	22.673	-.035
83/ 2/21	5386.830	36	905	848	57	22.698	22.675	.023
83/ 2/22	5387.690	7	795	820	-25	22.545	22.677	-.132
83/ 2/23	5388.756	21	863	786	77	22.607	22.680	-.073
83/ 2/24	5389.743	21	835	754	81	22.691	22.682	.009
83/ 2/25	5390.763	23	717	721	-4	22.625	22.685	-.060
83/ 2/26	5391.731	14	697	690	7	22.724	22.687	.037
83/ 3/11	5404.793	19	326	264	62	22.816	22.713	.103
83/ 3/13	5406.892	15	67	195	-128	22.832	22.716	.117
83/ 3/14	5407.757	15	62	167	-105	22.755	22.717	.038
83/ 3/19	5412.980	10	56	-5	61	22.897	22.723	.174
83/ 3/26	5419.786	22	-202	-231	29	22.788	22.727	.061
83/ 3/29	5422.804	25	-299	-331	32	22.801	22.728	.073
83/ 3/30	5423.838	16	-297	-365	68	22.714	22.728	-.014
83/ 3/31	5424.848	19	-319	-398	79	22.781	22.728	.053
83/ 4/ 1	5425.940	14	-489	-435	-54	22.803	22.728	.076
83/ 4/ 2	5426.740	8	-412	-461	49	22.659	22.728	-.069
83/ 4/ 6	5430.913	17	-601	-599	-2	22.665	22.726	-.061
83/ 4/ 7	5431.843	24	-644	-630	-14	22.694	22.726	-.032
83/ 4/ 8	5432.770	12	-760	-660	-100	22.735	22.725	.010
83/ 4/13	5437.850	23	-708	-827	119	22.663	22.721	-.059
83/ 4/14	5438.758	15	-872	-856	-15	22.608	22.720	-.113
83/ 4/15	5439.836	25	-919	-892	-27	22.710	22.719	-.009
83/ 4/16	5440.876	18	-896	-925	29	22.676	22.718	-.042
83/ 4/17	5441.876	18	-972	-958	-15	22.611	22.717	-.106
83/ 4/18	5442.876	18	-1027	-990	-37	22.654	22.716	-.062
83/ 4/19	5443.920	5	-1008	-1023	15	22.706	22.715	-.009
83/ 4/22	5446.867	15	-1043	-1117	74	22.726	22.712	.015
83/ 4/23	5447.820	10	-1218	-1147	-71	22.730	22.711	.019
83/ 4/29	5453.846	18	-1405	-1335	-71	22.710	22.702	.008
83/ 5/ 2	5456.780	5	-1519	-1424	-95	22.695	22.697	-.002
83/ 5/ 3	5457.880	6	-1420	-1457	37	22.726	22.695	.031
83/ 5/ 4	5458.830	18	-1410	-1485	74	22.669	22.693	-.024
83/ 5/ 8	5462.823	17	-1626	-1601	-24	22.724	22.686	.039
83/ 5/12	5466.806	18	-1684	-1714	31	22.715	22.677	.038
83/ 5/16	5470.900	11	-1874	-1827	-47	22.667	22.666	.001
83/ 5/17	5471.875	19	-1858	-1853	-5	22.731	22.664	.068

TABLE 18 CALGARY PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 50 52	SMOOTHED PHI 0 LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
83/ 5/19	5473.869	18	-1991	-1906	-85	22.727	22.658	.069
83/ 5/22	5476.858	18	-1949	-1983	34	22.623	22.650	-.026
83/ 5/23	5477.861	19	-2004	-2008	4	22.699	22.646	.052
83/ 5/24	5478.855	19	-1964	-2033	69	22.636	22.643	-.007
83/ 5/25	5479.849	14	-2181	-2058	-123	22.643	22.640	.003
83/ 5/27	5481.849	18	-2140	-2107	-34	22.538	22.634	-.095
83/ 5/28	5482.845	19	-2198	-2131	-68	22.613	22.630	-.017
83/ 5/29	5483.845	19	-2162	-2155	-8	22.656	22.627	.029
83/ 5/30	5484.847	12	-2145	-2178	33	22.586	22.623	-.037
83/ 5/31	5485.835	19	-2129	-2201	73	22.740	22.620	.121
83/ 6/ 6	5491.824	14	-2453	-2336	-117	22.628	22.598	.030
83/ 6/ 8	5493.815	19	-2338	-2379	40	22.645	22.590	.055
83/ 6/10	5495.831	11	-2516	-2421	-95	22.584	22.582	.002
83/ 6/11	5496.811	16	-2472	-2442	-31	22.592	22.578	.014
83/ 6/13	5498.840	8	-2584	-2483	-101	22.475	22.570	-.095
83/ 6/14	5499.780	6	-2411	-2502	91	22.602	22.566	.036
83/ 6/15	5500.795	19	-2528	-2522	-6	22.571	22.562	.008
83/ 6/16	5501.807	15	-2542	-2542	1	22.564	22.558	.005
83/ 6/17	5502.778	15	-2665	-2561	-104	22.511	22.554	-.043
83/ 6/19	5504.789	14	-2510	-2600	90	22.540	22.546	-.006
83/ 6/25	5510.770	5	-2582	-2711	129	22.464	22.522	-.058
83/ 6/26	5511.837	19	-2699	-2730	31	22.461	22.518	-.057
83/ 6/28	5513.823	19	-2732	-2765	33	22.498	22.510	-.013
83/ 6/29	5514.802	16	-2798	-2783	-15	22.357	22.506	-.150
83/ 6/30	5515.870	5	-2892	-2801	-91	22.539	22.502	.037
83/ 7/ 4	5519.812	21	7073	7131	-58	22.468	22.487	-.019
83/ 7/ 5	5520.805	12	7137	7114	23	22.520	22.484	.036
83/ 7/ 6	5521.818	19	7179	7097	82	22.416	22.480	-.064
83/ 7/ 9	5524.774	10	6982	7047	-65	22.584	22.469	.114
83/ 7/11	5526.792	23	7088	7014	75	22.417	22.462	-.045
83/ 7/17	5532.900	5	6882	6913	-31	22.441	22.442	-.001
83/ 7/18	5533.842	20	6834	6898	-63	22.453	22.438	.015
83/ 7/19	5534.840	21	6718	6882	-163	22.425	22.435	-.011
83/ 7/20	5535.870	10	6902	6865	37	22.467	22.432	.035
83/ 7/21	5536.834	21	6893	6849	44	22.396	22.429	-.033
83/ 7/22	5537.830	21	6874	6833	41	22.426	22.426	.000
83/ 7/23	5538.826	20	6701	6817	-116	22.519	22.422	.097
83/ 7/24	5539.817	12	6925	6801	124	22.452	22.419	.033
83/ 7/26	5541.807	15	6830	6768	62	22.429	22.413	.016
83/ 7/27	5542.830	14	6671	6752	-81	22.354	22.410	-.056
83/ 7/28	5543.809	19	6873	6736	137	22.441	22.407	.034
83/ 7/30	5545.809	19	6855	6703	152	22.433	22.401	.033
83/ 8/ 1	5547.778	12	6763	6671	92	22.413	22.395	.018
83/ 8/ 2	5548.798	19	6592	6655	-63	22.329	22.392	-.063
83/ 8/ 3	5549.836	33	6671	6638	33	22.359	22.389	-.030
83/ 8/ 4	5550.806	24	6784	6622	161	22.493	22.386	.107
83/ 8/ 5	5551.845	22	6535	6605	-70	22.374	22.383	-.009
83/ 8/ 6	5552.824	22	6669	6590	79	22.398	22.380	.019
83/ 8/ 7	5553.829	17	6673	6573	100	22.508	22.377	.131
83/ 8/ 9	5555.843	26	6554	6541	13	22.365	22.371	-.006
83/ 8/10	5556.818	30	6426	6525	-99	22.389	22.368	.020
83/ 8/11	5557.803	29	6502	6509	-7	22.348	22.366	-.018
83/ 8/12	5558.730	6	6625	6494	131	22.376	22.363	.013
83/ 8/13	5559.810	33	6511	6477	35	22.347	22.360	-.013
83/ 8/14	5560.806	33	6420	6461	-41	22.324	22.357	-.033
83/ 8/15	5561.807	21	6466	6445	22	22.387	22.355	.032
83/ 8/16	5562.806	26	6479	6429	50	22.322	22.352	-.030
83/ 8/17	5563.802	31	6377	6413	-36	22.281	22.349	-.069
83/ 8/19	5565.805	26	6361	6381	-20	22.383	22.344	.038
83/ 8/20	5566.785	8	6518	6365	152	22.257	22.342	-.085
83/ 8/22	5568.795	31	6334	6334	1	22.329	22.336	-.008
83/ 8/23	5569.786	33	6263	6318	-55	22.308	22.334	-.026
83/ 8/26	5572.822	17	6131	6271	-140	22.402	22.327	.075
83/ 8/27	5573.782	26	6220	6256	-36	22.364	22.324	.040

TABLE 18 CALGARY PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 50 52	SMOOTHED PHI 0 LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
83/ 8/29	5575.766	33	6096	6225	-129	22.260	22.320	-.060
83/ 8/30	5576.774	30	6230	6210	21	22.269	22.317	-.048
83/ 8/31	5577.724	9	6169	6195	-26	22.246	22.315	-.069
83/ 9/ 1	5578.795	13	6096	6179	-83	22.250	22.313	-.063
83/ 9/ 2	5579.830	6	6015	6163	-148	22.304	22.310	-.006
83/ 9/ 3	5580.832	14	5791	6148	-357	22.322	22.308	.014
83/ 9/ 4	5581.834	31	6117	6133	-16	22.323	22.306	.017
83/ 9/ 5	5582.843	24	6254	6118	136	22.254	22.304	-.050
83/ 9/ 6	5583.828	32	6142	6103	39	22.359	22.302	.057
83/ 9/ 7	5584.819	27	6147	6088	59	22.242	22.300	-.058
83/ 9/ 8	5585.771	12	6214	6074	140	22.347	22.298	.049
83/ 9/ 9	5586.775	15	6177	6059	118	22.333	22.296	.038
83/ 9/10	5587.821	28	5926	6044	-117	22.364	22.294	.070
83/ 9/11	5588.810	6	5927	6029	-102	22.374	22.292	.082
83/ 9/12	5589.843	23	5993	6014	-20	22.292	22.290	.002
83/ 9/13	5590.805	31	5980	5999	-20	22.335	22.288	.047
83/ 9/14	5591.785	10	5966	5985	-19	22.257	22.286	-.029
83/ 9/15	5592.801	32	5851	5970	-119	22.302	22.284	.018
83/ 9/17	5594.818	25	5993	5940	53	22.202	22.280	-.079
83/ 9/19	5596.871	17	6058	5909	149	22.109	22.277	-.168
83/ 9/20	5597.799	34	5890	5896	-6	22.437	22.275	.162
83/ 9/22	5599.900	6	6004	5864	140	22.316	22.272	.044
83/ 9/23	5600.811	38	5899	5851	48	22.220	22.270	-.050
83/ 9/24	5601.765	15	5876	5836	40	22.249	22.269	-.020
83/ 9/26	5603.750	7	5648	5806	-158	22.225	22.266	-.041
83/ 9/29	5606.794	38	5793	5760	33	22.325	22.261	.063
83/ 9/30	5607.814	34	5682	5744	-62	22.257	22.260	-.003
83/10/ 1	5608.794	41	5659	5729	-70	22.303	22.259	.044
83/10/ 2	5609.769	14	5814	5713	100	22.128	22.258	-.129
83/10/ 3	5610.779	29	5685	5698	-13	22.284	22.256	.028
83/10/ 4	5611.862	26	5656	5680	-24	22.223	22.255	-.032
83/10/ 5	5612.851	37	5704	5665	40	22.284	22.254	.030
83/10/ 6	5613.815	48	5694	5649	45	22.275	22.253	.022
83/10/ 7	5614.825	38	5705	5633	72	22.301	22.252	.049
83/10/ 8	5615.814	51	5635	5617	19	22.234	22.251	-.017
83/10/ 9	5616.812	49	5567	5600	-33	22.233	22.251	-.018
83/10/10	5617.842	38	5670	5583	86	22.211	22.250	-.039
83/10/11	5618.772	39	5493	5568	-75	22.290	22.249	.040
83/10/13	5620.798	49	5489	5534	-45	22.164	22.248	-.085
83/10/17	5624.701	26	5490	5466	24	22.227	22.247	-.021
83/10/19	5626.716	18	5183	5431	-248	22.160	22.247	-.087
83/10/20	5627.781	35	5404	5412	-8	22.242	22.247	-.005
83/10/21	5628.723	30	5476	5395	81	22.270	22.248	.023
83/10/22	5629.770	20	5438	5376	62	22.265	22.248	.017
83/10/23	5630.761	40	5410	5358	53	22.263	22.248	.015
83/10/24	5631.772	50	5359	5339	20	22.315	22.249	.066
83/10/25	5632.814	23	5351	5320	31	22.256	22.250	.007
83/10/27	5634.805	34	5339	5283	57	22.269	22.251	.018
83/10/28	5635.903	15	5369	5262	107	22.342	22.252	.090
83/10/29	5636.716	32	5162	5246	-84	22.185	22.253	-.067
83/10/30	5637.751	47	5226	5227	-1	22.181	22.254	-.073
83/11/ 1	5639.788	18	5298	5187	111	22.242	22.256	-.014
83/11/ 3	5641.709	19	5013	5150	-136	22.269	22.259	.010
83/11/ 4	5642.838	24	5174	5127	47	22.184	22.261	-.077
83/11/ 5	5643.799	47	5211	5108	103	22.266	22.262	.004
83/11/ 7	5645.817	28	5134	5068	66	22.235	22.266	-.030
83/11/ 8	5646.799	50	5041	5048	-7	22.338	22.268	.071
83/11/12	5650.903	21	4977	4965	12	22.129	22.276	-.147
83/11/13	5651.850	27	4958	4946	12	22.230	22.278	-.049
83/11/14	5652.781	49	4856	4927	-71	22.284	22.280	.004
83/11/15	5653.620	7	4861	4910	-49	22.420	22.282	.138
83/11/17	5655.827	37	4878	4865	13	22.277	22.288	-.011
83/11/18	5656.853	19	4876	4844	31	22.178	22.290	-.112
83/11/19	5657.771	51	4738	4826	-88	22.277	22.293	-.016

TABLE 18 CALGARY PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE (UT)	JULIAN DATE JOUR JULIEN 2440000.	N	OBSERVED UTO-UTC OBSERVE .0001S	SMOOTHED UTO-UTC LISSE .0001S	UT RES. .0001S	OBSERVED PHI 0 OBSERVE 50 52	SMOOTHED PHI 0 LISSE 50 52	PHI RES.
1	2	3	4	5	6	7	8	9
83/11/27	5665.683	16	4442	4668	-226	22.361	22.313	.048
83/11/30	5668.788	55	4596	4607	-12	22.407	22.321	.086
83/12/ 1	5669.771	58	4546	4588	-42	22.364	22.324	.040
83/12/ 2	5670.774	59	4566	4569	-3	22.368	22.326	.042
83/12/ 3	5671.780	30	4643	4550	94	22.331	22.329	.003
83/12/ 4	5672.835	44	4539	4530	9	22.317	22.331	-.014
83/12/ 5	5673.770	60	4516	4512	4	22.316	22.333	-.018
83/12/ 6	5674.765	60	4476	4494	-18	22.298	22.336	-.038
83/12/ 7	5675.752	54	4463	4475	-12	22.329	22.338	-.009
83/12/ 8	5676.650	8	4533	4459	74	22.400	22.340	.059
83/12/12	5680.878	32	4463	4382	81	22.347	22.350	-.003
83/12/28	5696.790	42	4099	4115	-17	22.439	22.377	.062
83/12/29	5697.772	37	4040	4100	-60	22.369	22.379	-.009
83/12/31	5699.773	40	4036	4069	-33	22.359	22.381	-.022

TABLE 2 INTERPOLATED SMOOTHED PZT TIME AND LATITUDE OBSERVATIONS
TABLEAU INTERPOLEES VALEURS LISSEES DES OBSERVATIONS PZT DE TEMPS ET DE LATITUDE

DATE 0 UT	JULIAN DATE JOUR JULIEN 2440000.	OTTAWA SB UT0-UTC .0001S	OTTAWA SB PHI 0 45 24	CALGARY UT0-UTC .0001S	CALGARY PHI 0 50 52
82/ 1/ 5	4974.5	176	1.125	20	22.669
82/ 1/10	4979.5	70	1.134	-96	22.675
82/ 1/15	4984.5	-36	1.141	-213	22.678
82/ 1/20	4989.5	-142	1.148	-329	22.679
82/ 1/25	4994.5	-248	1.155	-443	22.676
82/ 1/30	4999.5	-355	1.161	-557	22.672
82/ 2/ 4	5004.5	-463	1.168	-669	22.666
82/ 2/ 9	5009.5	-573	1.174	-781	22.658
82/ 2/14	5014.5	-684	1.180	-893	22.650
82/ 2/19	5019.5	-798	1.187	-1005	22.642
82/ 2/24	5024.5	-914	1.193	-1119	22.633
82/ 3/ 1	5029.5	-1032	1.198	-1235	22.626
82/ 3/ 6	5034.5	-1153	1.203	-1353	22.619
82/ 3/11	5039.5	-1276	1.207	-1474	22.613
82/ 3/16	5044.5	-1402	1.210	-1599	22.608
82/ 3/21	5049.5	-1531	1.212	-1728	22.603
82/ 3/26	5054.5	-1661	1.212	-1861	22.599
82/ 3/31	5059.5	-1794	1.212	-1997	22.594
82/ 4/ 5	5064.5	-1928	1.210	-2136	22.589
82/ 4/10	5069.5	-2063	1.206	-2277	22.582
82/ 4/15	5074.5	-2199	1.201	-2419	22.575
82/ 4/20	5079.5	-2335	1.195	-2560	22.566
82/ 4/25	5084.5	-2470	1.187	-2700	22.557
82/ 4/30	5089.5	-2604	1.178	-2838	22.546
82/ 5/ 5	5094.5	-2736	1.168	-2972	22.534
82/ 5/10	5099.5	-2866	1.157	-3101	22.520
82/ 5/15	5104.5	-2992	1.144	-3224	22.506
82/ 5/20	5109.5	-3115	1.131	-3340	22.490
82/ 5/25	5114.5	-3234	1.117	-3448	22.472
82/ 5/30	5119.5	-3348	1.101	-3548	22.453
82/ 6/ 4	5124.5	-3458	1.085	-3638	22.433
82/ 6/ 9	5129.5	-3562	1.067	-3720	22.412
82/ 6/14	5134.5	-3662	1.049	-3793	22.391
82/ 6/19	5139.5	-3758	1.030	-3859	22.370
82/ 6/24	5144.5	-3849	1.011	-3918	22.349
82/ 6/29	5149.5	-3936	.992	-3973	22.330
82/ 7/ 4	5154.5	5979	.974	5974	22.312
82/ 7/ 9	5159.5	5898	.957	5923	22.295
82/ 7/14	5164.5	5819	.941	5872	22.281
82/ 7/19	5169.5	5741	.927	5820	22.268
82/ 7/24	5174.5	5664	.915	5766	22.258
82/ 7/29	5179.5	5587	.905	5707	22.249
82/ 8/ 3	5184.5	5510	.897	5644	22.242
82/ 8/ 8	5189.5	5433	.890	5576	22.237
82/ 8/13	5194.5	5355	.886	5501	22.233
82/ 8/18	5199.5	5276	.882	5421	22.230
82/ 8/23	5204.5	5196	.880	5334	22.229
82/ 8/28	5209.5	5113	.878	5241	22.229
82/ 9/ 2	5214.5	5029	.876	5143	22.231
82/ 9/ 7	5219.5	4942	.875	5040	22.235
82/ 9/12	5224.5	4852	.873	4932	22.240
82/ 9/17	5229.5	4759	.870	4822	22.246
82/ 9/22	5234.5	4662	.868	4710	22.254
82/ 9/27	5239.5	4564	.865	4597	22.264
82/10/ 2	5244.5	4463	.861	4484	22.275
82/10/ 7	5249.5	4360	.859	4372	22.287
82/10/12	5254.5	4256	.856	4261	22.299
82/10/17	5259.5	4151	.855	4153	22.313
82/10/22	5264.5	4046	.855	4045	22.327
82/10/27	5269.5	3941	.856	3938	22.340
82/11/ 1	5274.5	3836	.859	3831	22.354
82/11/ 6	5279.5	3731	.863	3723	22.368
82/11/11	5284.5	3625	.869	3614	22.381
82/11/16	5289.5	3518	.875	3502	22.395
82/11/21	5294.5	3410	.882	3387	22.408
82/11/26	5299.5	3300	.890	3270	22.421
82/12/ 1	5304.5	3188	.899	3151	22.434

TABLE 2 INTERPOLATED SMOOTHED PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU INTERPOLEES VALEURS LISSEES DES OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE 0 UT	JULIAN DATE JOUR JULIEN 2440000.	OTTAWA SB UT0-UTC .0001S	OTTAWA SB PHI 0 45 24	CALGARY UT0-UTC .0001S	CALGARY PHI 0 50 52
82/12/ 6	5309.5	3073	.908	3031	22.447
82/12/11	5314.5	2957	.918	2908	22.459
82/12/16	5319.5	2839	.928	2784	22.473
82/12/21	5324.5	2718	.938	2658	22.486
82/12/26	5329.5	2596	.948	2532	22.501
82/12/31	5334.5	2471	.958	2404	22.518

TABLE 2 INTERPOLATED SMOOTHED PZT TIME AND LATITUDE OBSERVATIONS
TABLEAU INTERPOLEES VALEURS LISSEES DES OBSERVATIONS PZT DE TEMPS ET DE LATITUDE

DATE 0 UT	JULIAN DATE JOUR JULIEN 2440000.	OTTAWA SB UT0-UTC .0001S	OTTAWA SB PHI 0 45 24	CALGARY UT0-UTC .0001S	CALGARY PHI 0 50 52
83/ 1/ 5	5339.5	2338	.985	2279	22.541
83/ 1/10	5344.5	2204	1.002	2142	22.557
83/ 1/15	5349.5	2068	1.020	2000	22.574
83/ 1/20	5354.5	1928	1.038	1854	22.590
83/ 1/25	5359.5	1787	1.056	1704	22.605
83/ 1/30	5364.5	1642	1.073	1551	22.619
83/ 2/ 4	5369.5	1496	1.091	1396	22.632
83/ 2/ 9	5374.5	1348	1.109	1239	22.645
83/ 2/14	5379.5	1198	1.126	1081	22.658
83/ 2/19	5384.5	1046	1.143	922	22.670
83/ 2/24	5389.5	893	1.160	761	22.682
83/ 3/ 1	5394.5	740	1.177	600	22.693
83/ 3/ 6	5399.5	585	1.194	437	22.703
83/ 3/11	5404.5	431	1.211	273	22.712
83/ 3/16	5409.5	276	1.228	109	22.719
83/ 3/21	5414.5	121	1.244	-55	22.724
83/ 3/26	5419.5	-32	1.259	-221	22.727
83/ 3/31	5424.5	-185	1.273	-386	22.728
83/ 4/ 5	5429.5	-337	1.284	-552	22.727
83/ 4/10	5434.5	-487	1.293	-717	22.724
83/ 4/15	5439.5	-636	1.300	-880	22.720
83/ 4/20	5444.5	-784	1.305	-1041	22.715
83/ 4/25	5449.5	-930	1.307	-1200	22.708
83/ 4/30	5454.5	-1075	1.308	-1354	22.701
83/ 5/ 5	5459.5	-1217	1.307	-1504	22.692
83/ 5/10	5464.5	-1357	1.304	-1649	22.682
83/ 5/15	5469.5	-1495	1.300	-1788	22.670
83/ 5/20	5474.5	-1629	1.294	-1921	22.656
83/ 5/25	5479.5	-1759	1.287	-2049	22.641
83/ 5/30	5484.5	-1886	1.279	-2170	22.624
83/ 6/ 4	5489.5	-2008	1.269	-2284	22.606
83/ 6/ 9	5494.5	-2125	1.258	-2393	22.587
83/ 6/14	5499.5	-2237	1.245	-2496	22.567
83/ 6/19	5504.5	-2344	1.231	-2594	22.547
83/ 6/24	5509.5	-2446	1.216	-2687	22.527
83/ 6/29	5514.5	-2543	1.199	-2777	22.508
83/ 7/ 4	5519.5	7364	1.183	7136	22.489
83/ 7/ 9	5524.5	7275	1.166	7051	22.470
83/ 7/14	5529.5	7189	1.149	6968	22.453
83/ 7/19	5534.5	7105	1.132	6887	22.436
83/ 7/24	5539.5	7023	1.116	6805	22.420
83/ 7/29	5544.5	6942	1.100	6724	22.405
83/ 8/ 3	5549.5	6861	1.084	6643	22.390
83/ 8/ 8	5554.5	6780	1.068	6562	22.375
83/ 8/13	5559.5	6699	1.052	6481	22.361
83/ 8/18	5564.5	6617	1.036	6401	22.347
83/ 8/23	5569.5	6534	1.018	6322	22.335
83/ 8/28	5574.5	6450	1.001	6244	22.323
83/ 9/ 2	5579.5	6365	.983	6168	22.311
83/ 9/ 7	5584.5	6278	.964	6093	22.300
83/ 9/12	5589.5	6190	.945	6018	22.290
83/ 9/17	5594.5	6101	.925	5944	22.281
83/ 9/22	5599.5	6010	.906	5870	22.272
83/ 9/27	5604.5	5918	.887	5794	22.264
83/10/ 2	5609.5	5824	.869	5717	22.258
83/10/ 7	5614.5	5729	.852	5638	22.253
83/10/12	5619.5	5632	.836	5555	22.249
83/10/17	5624.5	5534	.822	5469	22.247
83/10/22	5629.5	5435	.810	5380	22.248
83/10/27	5634.5	5334	.801	5288	22.251
83/11/ 1	5639.5	5231	.794	5192	22.256
83/11/ 6	5644.5	5128	.789	5094	22.263
83/11/11	5649.5	5025	.786	4993	22.273
83/11/16	5654.5	4922	.786	4892	22.284
83/11/21	5659.5	4820	.787	4790	22.297
83/11/26	5664.5	4719	.789	4691	22.310
83/12/ 1	5669.5	4619	.792	4593	22.323

TABLE 2 INTERPOLATED SMOOTHED PZT TIME AND LATITUDE OBSERVATIONS (CONT.)
TABLEAU INTERPOLEES VALEURS LISSEES DES OBSERVATIONS PZT DE TEMPS ET DE LATITUDE (SUITE)

DATE 0 UT	JULIAN DATE JOUR JULIEN 2440000.	OTTAWA SB UT0-UTC .0001S	OTTAWA SB PHI 0 45 24	CALGARY UT0-UTC .0001S	CALGARY PHI 0 50 52
83/12/ 6	5674.5	4522	.796	4498	22.335
83/12/11	5679.5	4427	.800	4406	22.347
83/12/16	5684.5	4334	.804	4318	22.357
83/12/21	5689.5	4244	.808	4233	22.366
83/12/26	5694.5	4156	.813	4151	22.374
83/12/31	5699.5	4070	.818	4073	22.381